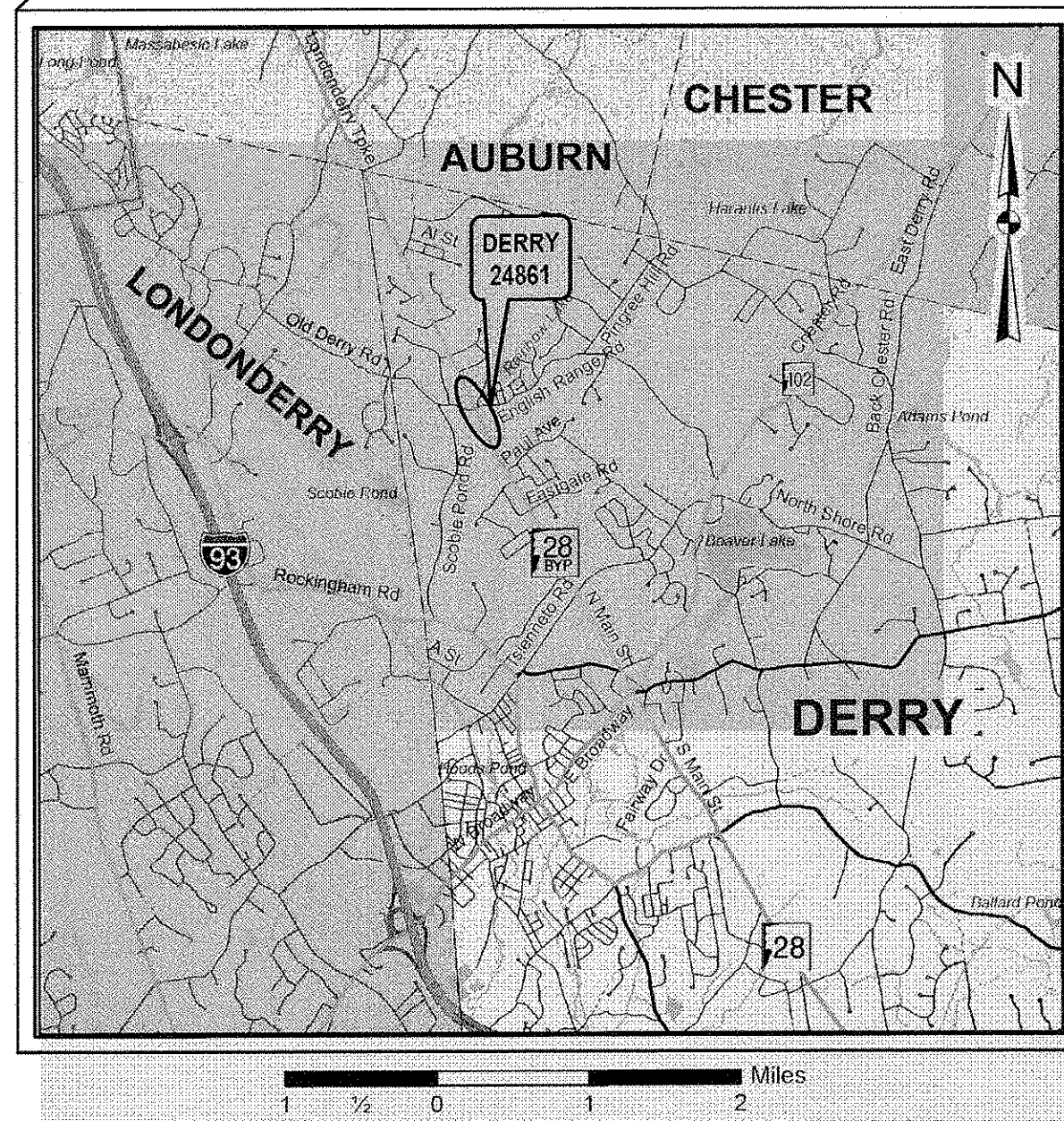


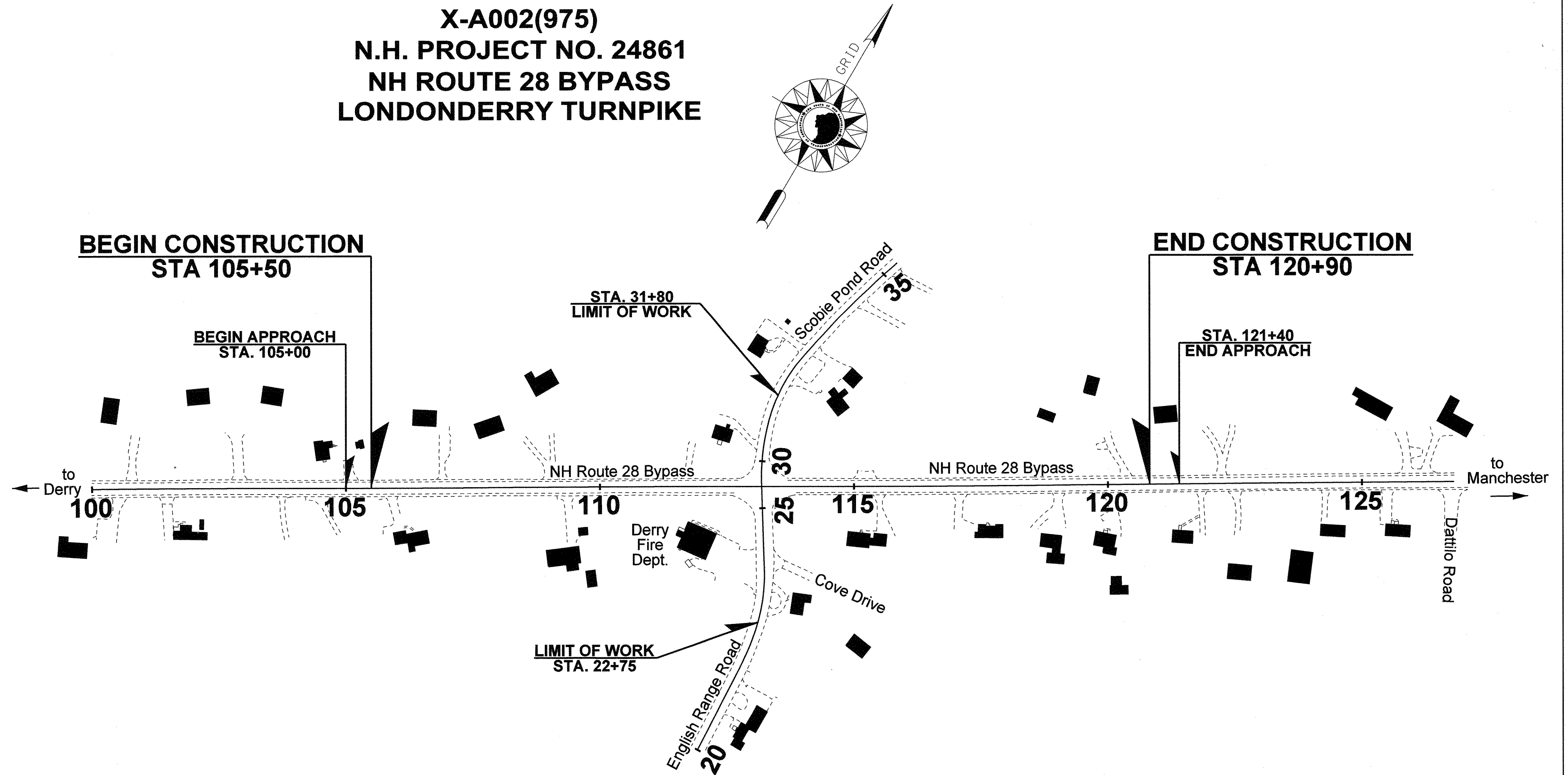
STATE OF NEW HAMPSHIRE
 DEPARTMENT OF TRANSPORTATION
CONSTRUCTION PLANS
FEDERAL AID PROJECT

X-A002(975)
 N.H. PROJECT NO. 24861
 NH ROUTE 28 BYPASS
 LONDONDERRY TURNPIKE

DESIGN DATA	
AVERAGE DAILY TRAFFIC 20_15	9350
AVERAGE DAILY TRAFFIC 20_35	11400
PERCENT OF TRUCKS	6%
DESIGN SPEED	45 MPH
LENGTH OF PROJECT	1640 FT



LOCATION MAP



TOWN OF DERRY
 COUNTY OF ROCKINGHAM
 SCALE: 1" = 125'

DRAWN BY: TWC
 CHECKED BY: EP
 DATE: 2/21/18

NHDOT THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION

RECOMMENDED FOR APPROVAL:
 [Signature] 8/24/2018
 DIRECTOR OF PROJECT DEVELOPMENT DATE

APPROVED:
 [Signature] 8/29/18
 ASSISTANT COMMISSIONER AND CHIEF ENGINEER DATE

DRAWING NAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
24861fsc	X-A002(975)	24861	1	53

GENERAL NOTES

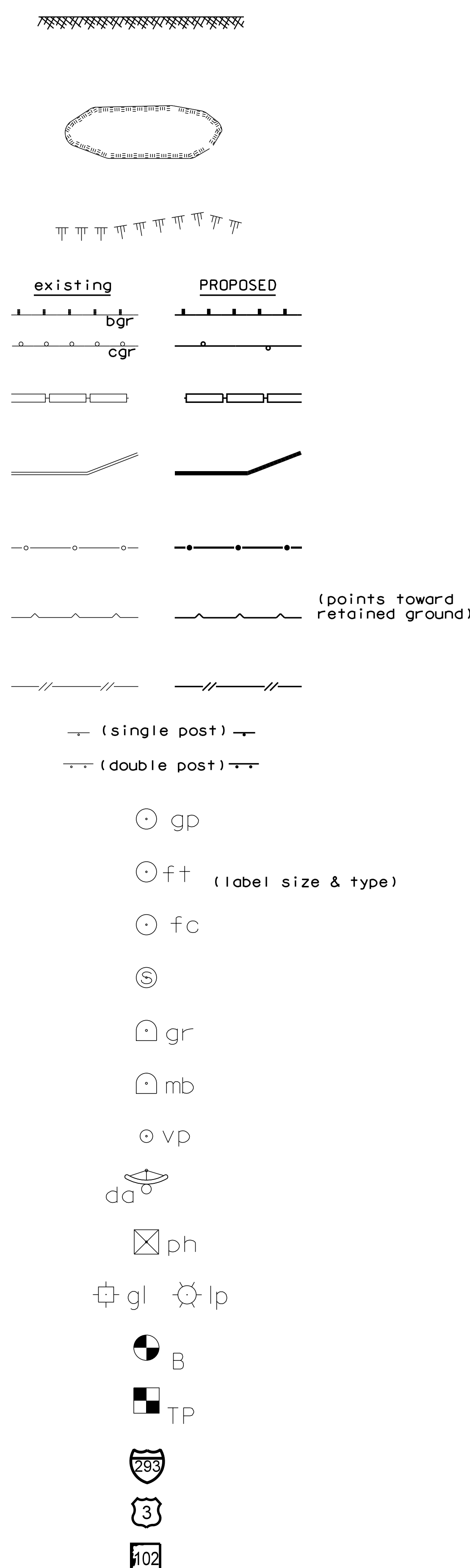
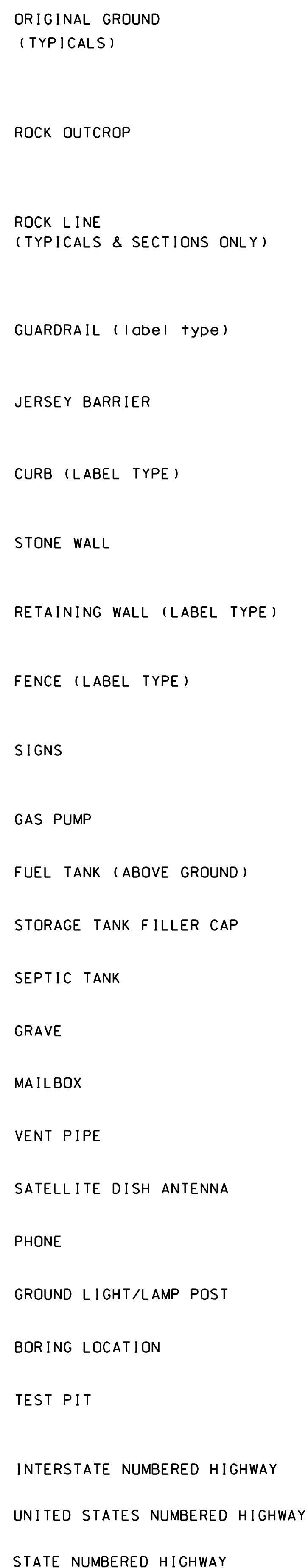
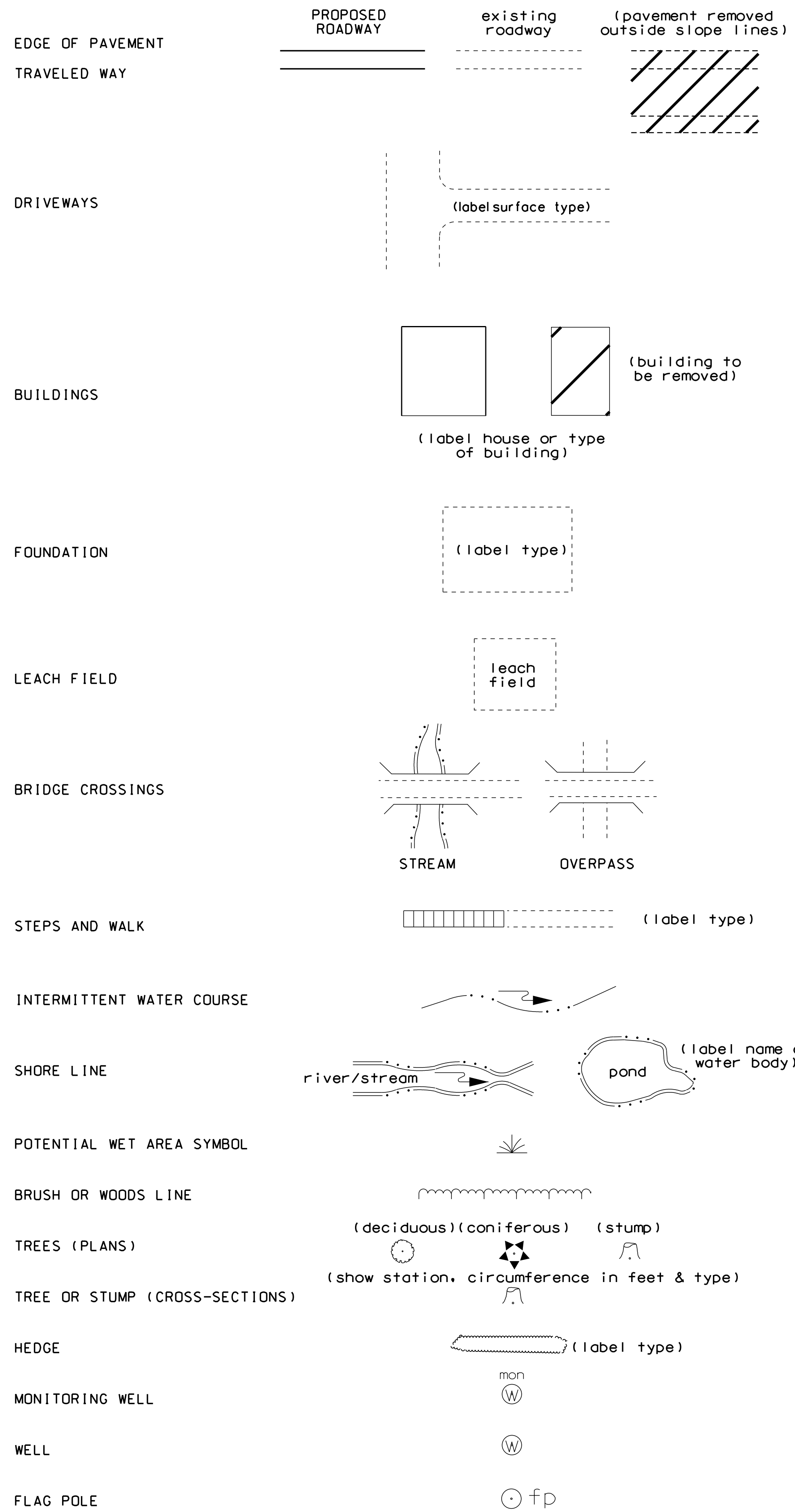
SHEET NO.	DESCRIPTION
1	TITLE PAGE
2	INDEX OF SHEETS AND GENERAL NOTES
3.4	STANDARD SYMBOLS
5.6	TYPICAL SECTIONS OF IMPROVEMENT
7.8	SUMMARY OF QUANTITIES
	SPECIAL USE PLANS
9	PAVEMENT MATCH DETAIL
10	DRIVEWAY DETAILS
11	FIRE STATION GRADING PLAN
12	SHADOW LAKE ROAD PLAN
13	TREATMENT SWALE DETAIL
14	CATCH BASIN WITH DOUBLE GRATE DETAILS
15	SIGN TEXT LAYOUT
16	DRAINAGE NOTES
	ROADWAY PLANS
17-23	GENERAL PLANS
24-28	PROFILES
29-35	CURBING, SIGNING, LIGHTING, PAVEMENT LAYOUT, AND PAVEMENT MARKING PLANS
36-38	SIGNAL PLANS
	CROSS SECTIONS
39-48	NH 28 BYPASS
49-50	ENGLISH RANGE ROAD
51-52	SCOBIE POND ROAD
53	TREATMENT SWALE

- ① FOR STANDARD PLANS, SEE DEPARTMENT OF TRANSPORTATION WEBSITE AT: WWW.NH.GOV/DOT/ORG/PROJECTDEVELOPMENT/HIGHWAYDESIGN/STANDARDPLANS/INDEX.HTM.
- ② HIGH TENSION OVERHEAD TRANSMISSION LINES ARE LOCATED THROUGHOUT THE PROJECT WITH CROSSINGS AT VARIOUS LOCATIONS AND RUNNING ALONG THE ROAD THROUGHOUT THE PROJECT EVEN ON REGULAR POLES. THE CONTRACTOR IS ADVISED THAT EXTREME CAUTION WILL BE REQUIRED IN THE OPERATION OF EQUIPMENT, ESPECIALLY CRANES AND PILE DRIVING EQUIPMENT.
- ③ MODIFY SUPERELEVATION ON EXISTING CURVES BY THE USE OF A LEVELING COURSE TO THE RATES INDICATED ON THE PLANS OR AS ORDERED.
- ④ EXISTING DELINEATORS AND WITNESS MARKERS THAT ARE REMOVED AND DETERMINED BY THE ENGINEER TO BE IN ACCEPTABLE CONDITION SHALL BE RESET (SUBSIDIARY). ADDITIONAL DELINEATORS AND WITNESS MARKERS ORDERED WILL BE PAID UNDER THE APPROPRIATE ITEMS OF THE CONTRACT.
- ⑤ NO EXISTING MONUMENTS, BOUNDS, OR BENCHMARKS SHALL BE DISTURBED WITHOUT FIRST MAKING PROVISIONS FOR RELOCATION.
- ⑥ PERFORM ALL WORK WITHIN THE EXISTING RIGHT-OF-WAY, UNLESS OTHERWISE SHOWN ON THE PLANS OR AS ORDERED BY THE ENGINEER.
- ⑦ REMOVE UNPROTECTED PROJECT MARKERS (SUBSIDIARY).
- ⑧ SURVEY DATA FOR THIS PROJECT WAS COLLECTED BY SDR AND THE FIELD NOTES CAN BE FOUND IN THE FIELD BOOK(S) 13437 & 13439. COORDINATES ARE NEW HAMPSHIRE STATE PLANE COORDINATES OF NAD82, 2011 ADJUSTMENT AND THE BEARINGS ARE GRID. ELEVATIONS ARE REFERENCED TO NAVD 88.
- ⑨ QUANTITIES FOR EMBANKMENT AND EXCAVATION FOR SLOPE ROUNDINGS AS SHOWN ON THE TYPICALS HAVE NOT BEEN CALCULATED AND ARE NOT INCLUDED IN THE QUANTITY SUMMARIES, AND ARE CONSIDERED SUBSIDIARY TO THE APPROPRIATE 203 ITEMS.

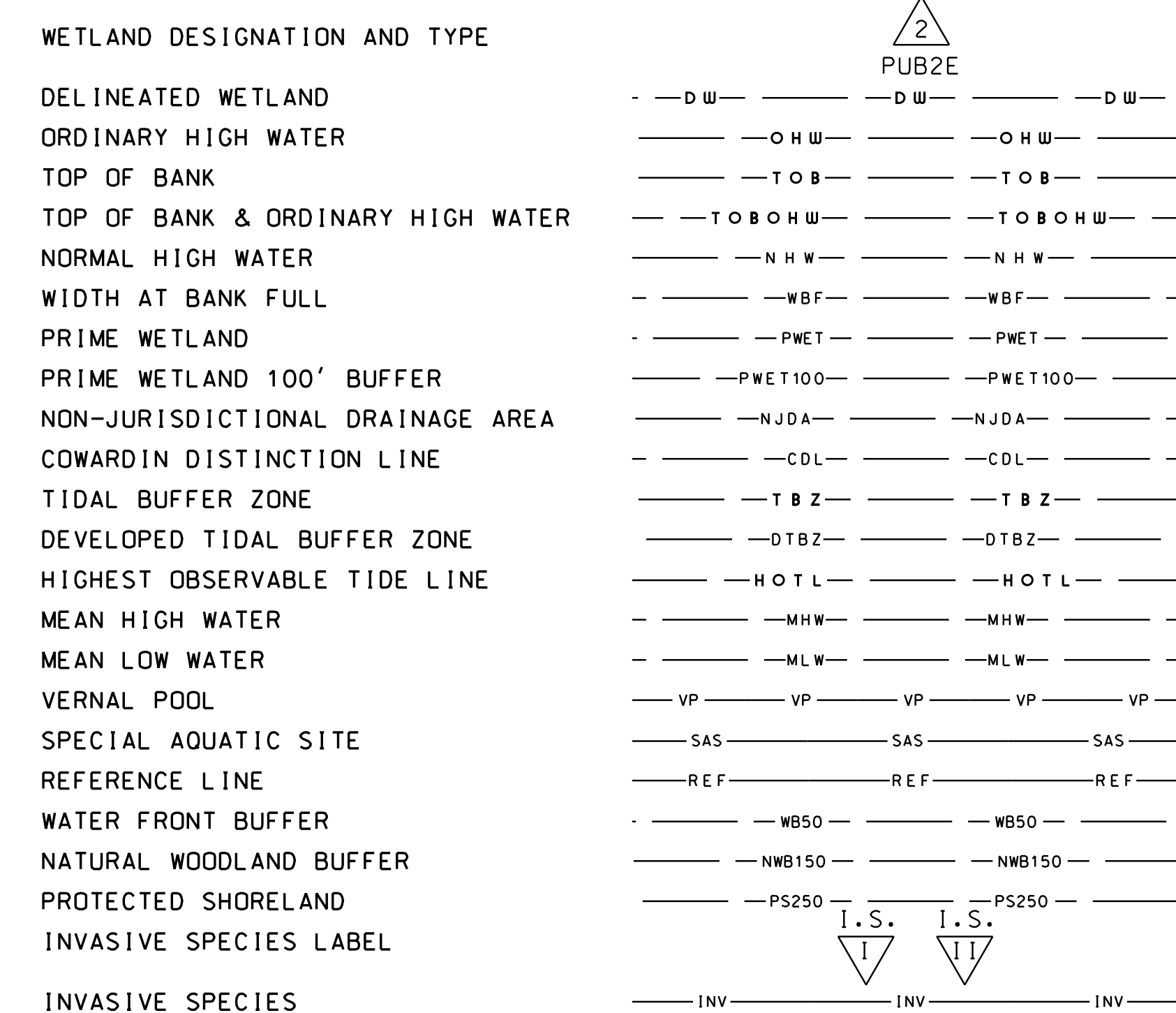
THE FOLLOWING GENERAL NOTES WILL BE USED ON THIS PROJECT:											
①	②	③	④	⑤	⑥	○	○	⑨	○	○	○
○	○	○	○	○	○	○	○	○	○	○	○

STATE OF NEW HAMPSHIRE				
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN				
<i>INDEX OF SHEETS AND GENERAL NOTES</i>				
REVISION DATE	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
9-1-2016	24861 in_sht	24861	2	53

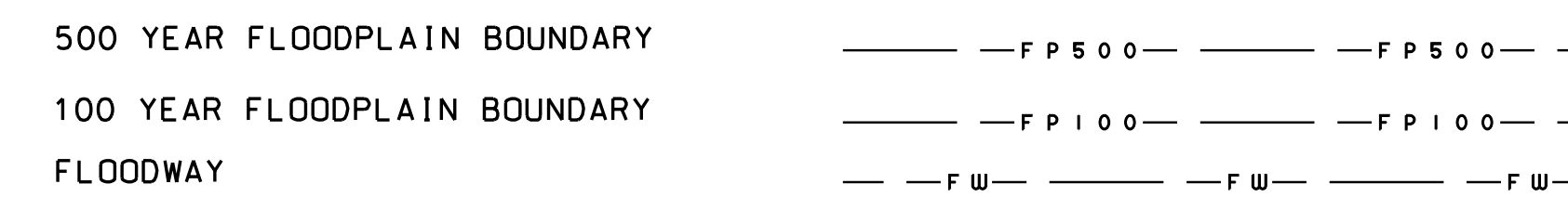
GENERAL



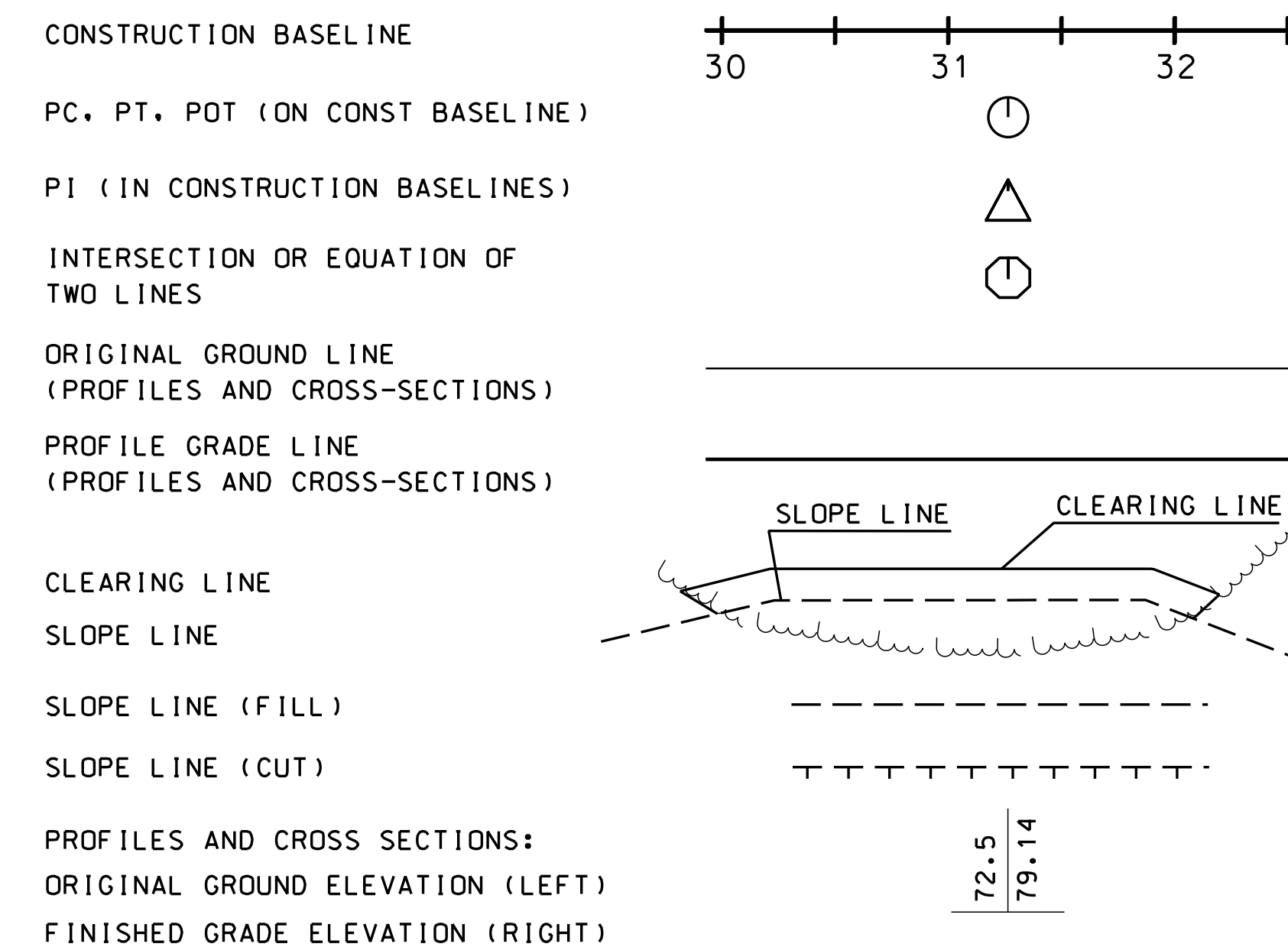
SHORELAND - WETLAND



FLOODPLAIN / FLOODWAY



ENGINEERING

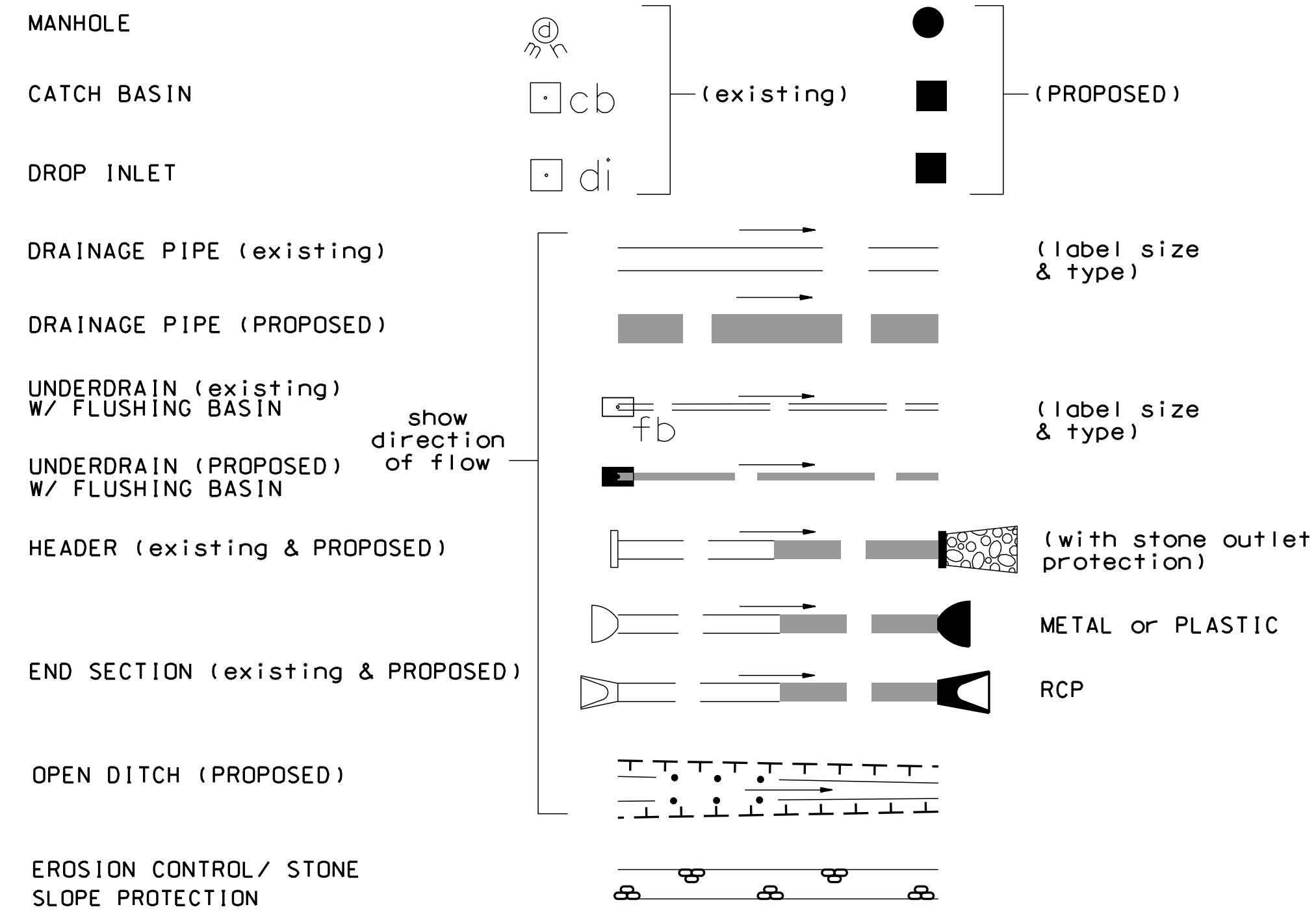


SHEET 1 OF 2

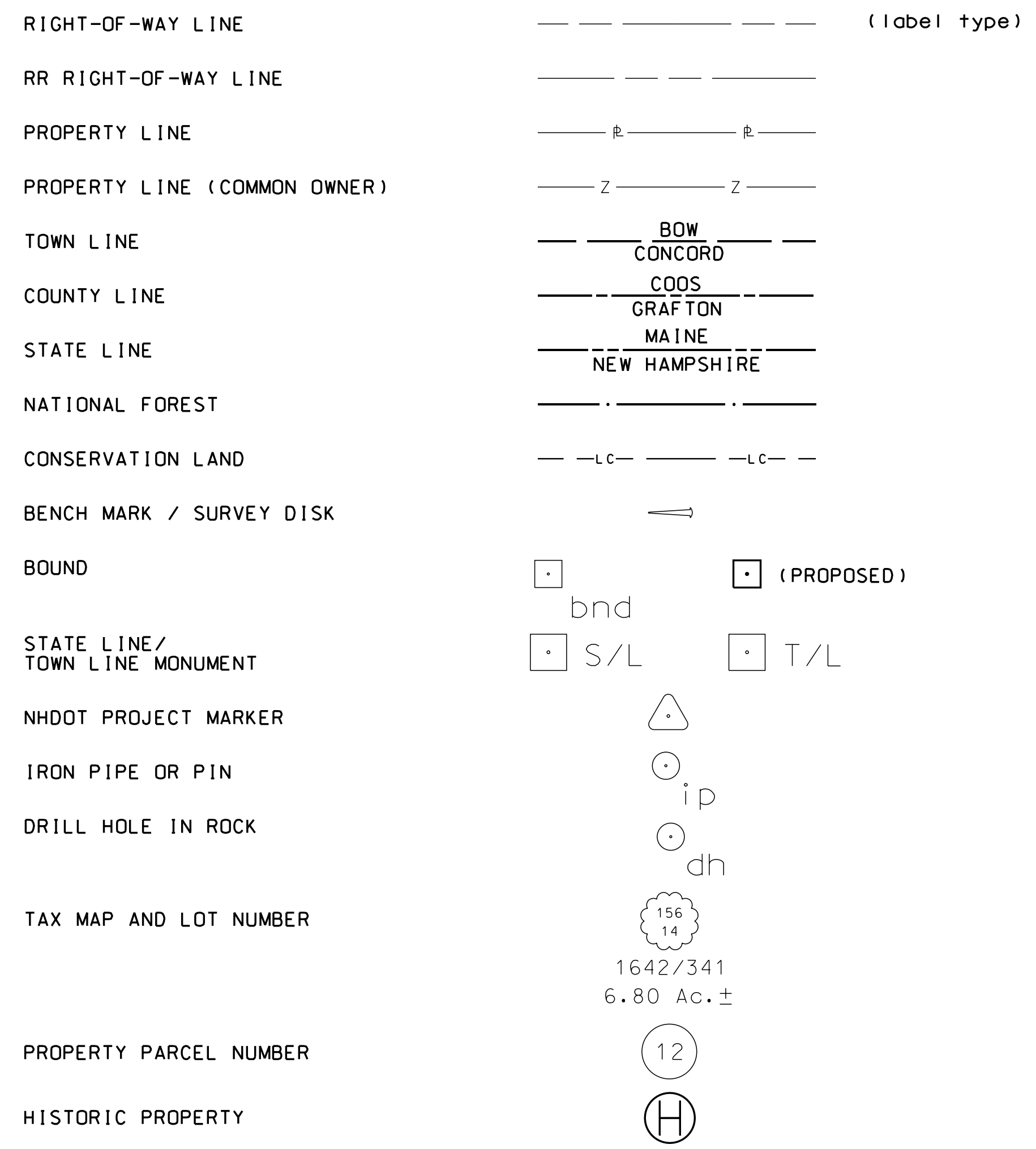
STATE OF NEW HAMPSHIRE
 DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN
STANDARD SYMBOLS

REVISION DATE	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
11-21-2014	24861 stdsymb1_2	24861	3	53

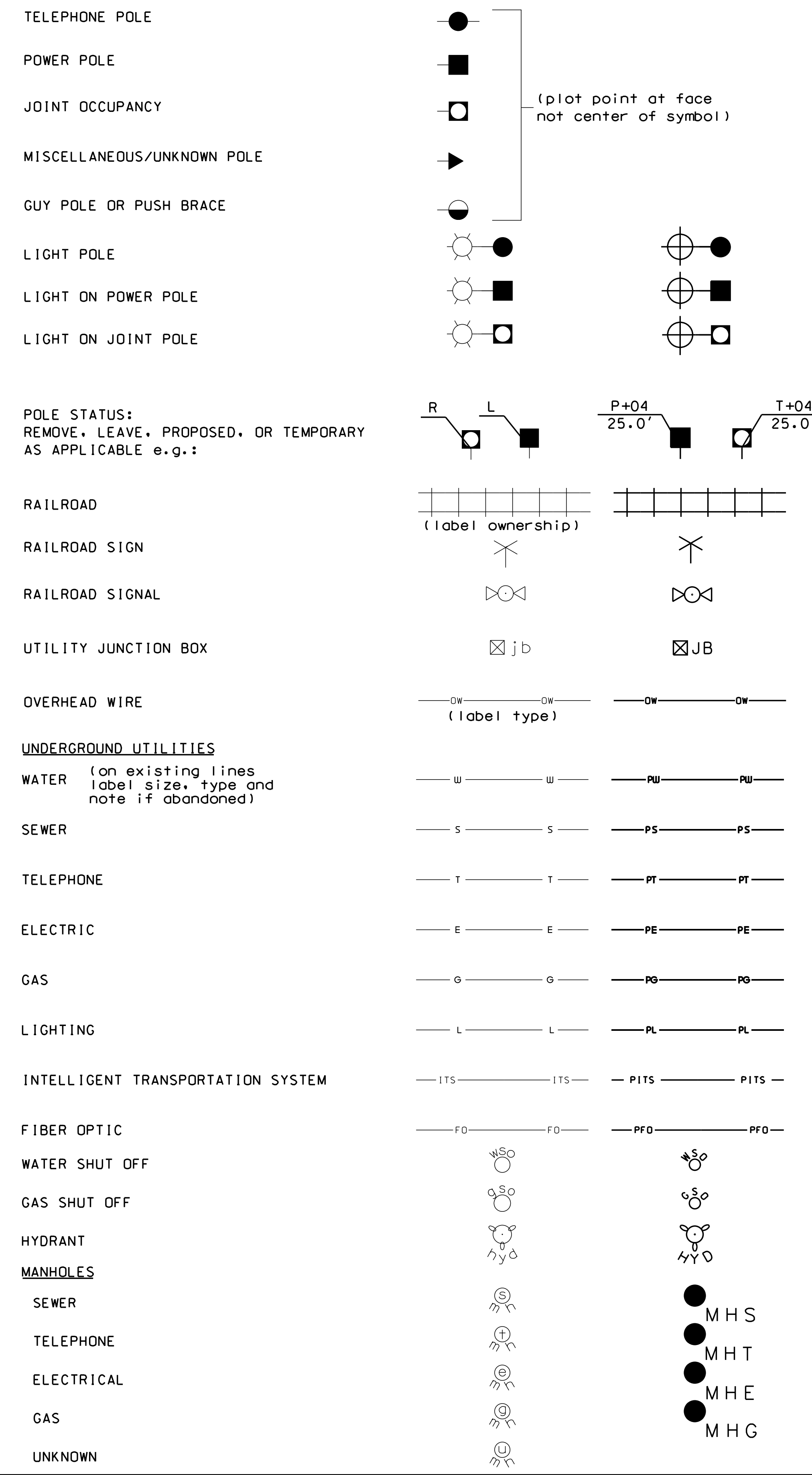
DRAINAGE



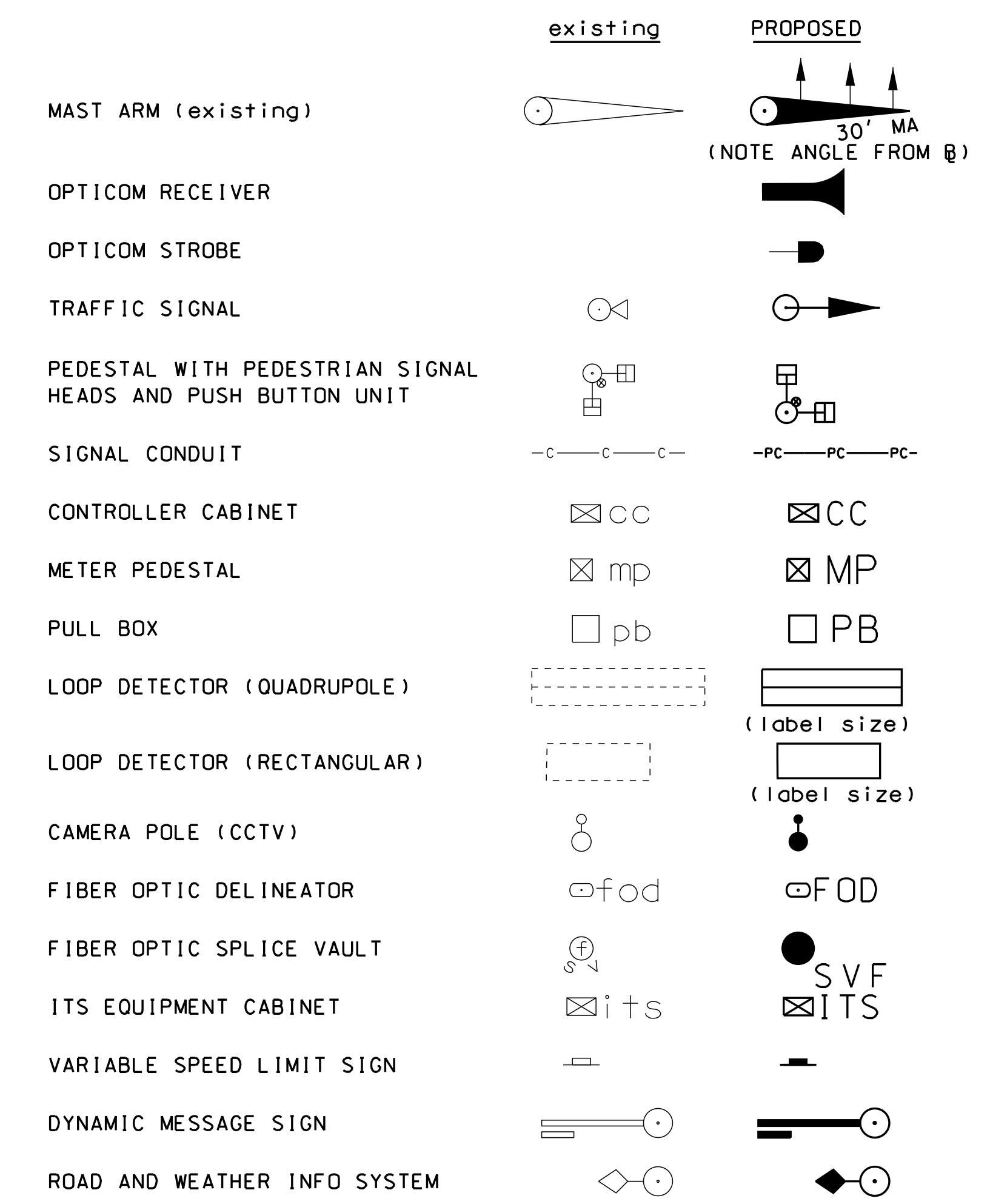
BOUNDARIES / RIGHT-OF-WAY



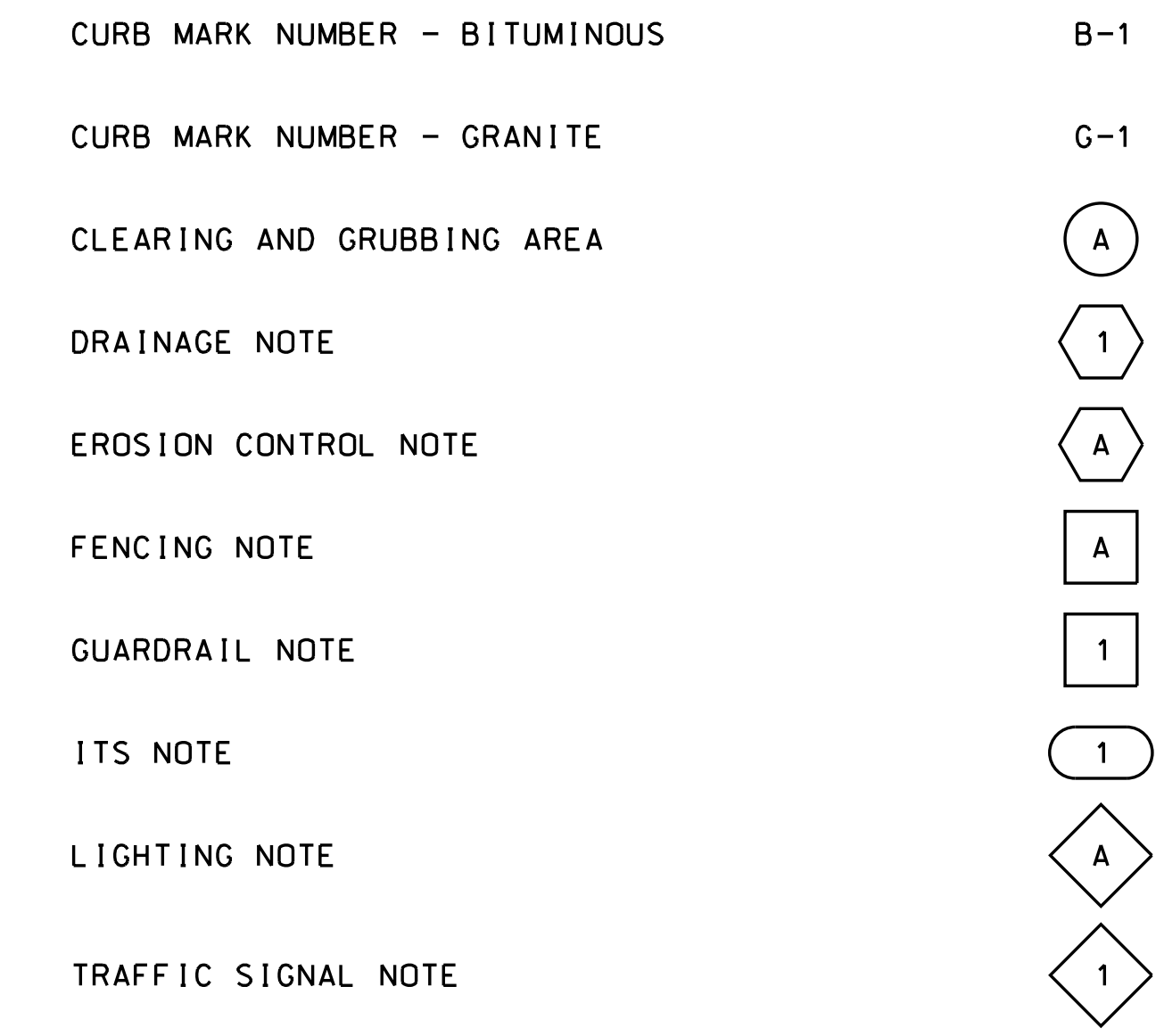
UTILITIES



TRAFFIC SIGNALS / ITS



CONSTRUCTION NOTES



STATE OF NEW HAMPSHIRE				
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN				
STANDARD SYMBOLS				
REVISION DATE	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
9-1-2016	24861 stdsymb1_2	24861	4	53

SUMMARY OF QUANTITIES (ESTIMATED)

THIS INFORMATION IS FOR BIDDING PURPOSES ONLY

REF. NO.	202.41		202.5		206.1		403.12		585.3		593.421		603.0001		603.00215		603.36112		603.80212		604.0007		604.164		604.1652		REMARKS
	LF	EA	CY	TON	CY	SY	LF	LF	EA	LF	EA	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	
1			1.5		1.5	9.1	75	75																			
2							25																				
3							35																				
4				0.66			17	17																			
4A			11.4		11.4	51.9																					
5							43	43																			
6							72.5	72.5																			
7			1.6	0.66			176.6	176.6																			
8			0.9	0.66			118.5	118.5																			
9				0.66			168.5	168.5																			
10							17																				
11							22.4																				
12																											
13							47.4																				
14				0.66			42.9																				
15			1.4		1.7	12.1	31																				
R1	18.2																										
R2	70.6	1																									
R3	17.1	1																									
R4	135.7	1																									
SUBTOTAL	241.6	3	16.8	3.3	14.6	73.1	891.8	671.1	3	220.7	5	9	9.3	1	1.2												
ROUNDING	8.4	0	0.2	0	0.4	1.9	28.2	18.9	0	29.3	0	0	0.7	0	0.3												
TOTAL	250	3	17	*	15	75	920	690	3	250	5	9	10	1	1.5												

* NOT AN ITEM TOTAL - SEE SURFACING MATERIALS

EARTHWORK		
DESCRIPTION	CY	TOTAL
COMMON EXCAVATION IN SECTIONS, INCL. BLDRS. & CONC. PVMT.	6998.2	
TOPSOIL REMOVAL - LRS (LIMITED REUSE SOIL)	1220.5	
ROCK EXCAVATION (2% OF TOTAL EXCAVATION)	140	
COMMON EXCAVATION FOR ESTIMATE (ITEM 203.1)	5704.0	5750
COMMON EXCAVATION - LRS (LIMITED REUSE SOIL) FOR ESTIMATE (ITEM 203.11)	1220.5	1230
ROCK EXCAVATION FOR ESTIMATE (ITEM 203.2)	140	150
REHANDLING AND TRANSPORTATION OF LRS FOR ESTIMATE (ITEM 203.382)	739	750
EMBANKMENT-IN-PLACE FOR ESTIMATE (ITEM 203.601)	834.6	850

CLEARING		
ITEM NO. 201.1		
DESCRIPTION	CLEARING AND GRUBBING (F)	
UNIT	SF	A
AREA DESIGNATION		
A	534	0.012
B	289	0.007
C	837	0.019
D	2183	0.050
E	602	0.014
F	6339	0.146
G	234	0.005
H	146	0.003
I	55	0.001
J	2479	0.057
K	1116	0.026
L	1846	0.042
M	4133	0.095
SUBTOTAL		0.48
ROUNDING		0.02
TOTAL		0.5

LANDSCAPING AND SLOPE			
ITEM NO.	641.	645.42	646.3
DESCRIPTION	LOAM	TEMPORARY SLOPE MATTING TYPE B (WILDLIFE FRIENDLY)	TURF ESTABLISHMENT WITH MULCH AND TACKIFIERS
UNIT	CY	SY	A
LOCATION			
NH ROUTE 28 BYPASS	864.30		1.01
ENGLISH RANGE ROAD	87.49		0.11
SCOBIE POND ROAD	49.18		0.06
TREATMENT SWALE	109.77	137.3	0.10
SUBTOTAL	1110.7	137.3	1.28
ROUNDING	39.3	2.7	0.22
TOTAL	1150	140	1.5

SUBSIDIARY ITEMS			
DESCRIPTION	SUBSIDIARY TO ITEM	UNIT	TOTAL
REMOVAL OF EXISTING DRAINAGE PIPES WHERE INDICATED	202/603	LF	132
REMOVAL OF EXISTING DRAINAGE STRUCTURE WHERE INDICATED	202/604	EA	2
SAWED BITUMINOUS PAVEMENT FOR PROPOSED CURBING	628.2	LF	540
SALT-TOLERANT GRASS SEED, TYPE 82	646.3	LB	4
TEMPORARY BITUMINOUS FILLETS WHERE INDICATED	PAVEMENT	TON	1
REMOVAL OF BUSHES WHERE INDICATED	203	EA	3

NOTE: THIS LIST SHOULD NOT BE CONSIDERED TO BE THE COMPLETE LIST OF SUBSIDIARY WORK PRESENT IN THE PROJECT. REFER ALSO TO THE PLANS, PROPOSAL, SPECIAL PROVISIONS, AND STANDARD SPECIFICATIONS. * QUANTITY OF SALVAGED MATERIALS TO BE DETERMINED IN THE FIELD BY CONTRACT ADMINISTRATOR.

CURBING			
ITEM NO.			609.216
ITEM	MARK NUMBER	RADIUS	STRAIGHT GRANITE SLOPE CURB 6" HIGH
UNIT			LF
LOCATION			
NH 28 BYPASS			
111+06 to 112+73	G-1		166.4
112+73 to 24+75	G-2	90	69.9
114+66 to 113+92	G-4		73.9
113+92 to 30+64	G-5	80	64.3
ENGLISH RANGE RD			
24+75 to 24+21	G-3		54.1
SCOBIE POND RD			
30+64 to 31+80	G-6		111
SUBTOTAL			539.6
ROUNDING			10.4
TOTAL			550

SDR PROCESSED DATE 5/2018
 NEW DESIGN DATE 5/2018
 SHEET CHECKED DATE 7/2018
 AS BUILT DETAILS DATE

SUMMARY OF QUANTITIES (ESTIMATED)

THIS INFORMATION IS FOR BIDDING PURPOSES ONLY

SDR PROCESSED
 NEW DESIGN TWC
 SHEET CHECKED ENP
 AS BUILT DETAILS
 REVISIONS AFTER PROPOSAL
 STATION
 STATION
 DATE
 DATE
 DATE
 DATE

SURFACING MATERIALS														
ITEM NO.	304.1	304.4	304.41	304.45	304.5	403.11002	403.11902	403.12	403.4	403.6	410.22	411.1	417.	628.2
DESCRIPTION	SAND (F)	CRUSHED STONE (FINE GRADATION) (F)	CRUSHED STONE (FINE GRADATION) FOR SHIM	CRUSHED STONE (FINE GRADATION) FOR DRIVES	CRUSHED STONE (COARSE GRADATION) (F)	HOT BITUMINOUS PAVEMENT, MACHINE METHOD (QC/QA TIER 2)	HOT BITUMINOUS PAVEMENT, MACHINE METHOD, HIGH STRENGTH (QC/QA TIER 2)	HOT BITUMINOUS PAVEMENT, HAND METHOD	MATERIAL TRANSFER VEHICLE (MTV)	PAVEMENT JOINT ADHESIVE	ASPHALT EMULSION FOR TACK COAT	HOT BITUMINOUS CONCRETE LEVELING COURSE	COLD PLANING BITUMINOUS SURFACES	SAWED BITUMINOUS PAVEMENT
LOCATION	CY	CY	CY	T	CY	TON	TON	TON	TON	LF	GAL	TON	SY	LF
NH ROUTE 28 BYPASS	1623.4	2190.4		41.7	1884	1270.3	666.4	54.2	666.4	13206.8	586.0	23.6	3568.1	225.5
ENGLISH RANGE ROAD	13.6	36.4	157.3	19.4	19	102.7	33.1	16.4	33.1	737.0	23.5		374.5	60.5
SCOBIE POND ROAD	55.5	67.9	12.3	3.6	61.3	17.3	64.4	7.2	64.4	597.9	20.1		515.0	24
FIRE STATION				207.6				140.7						
DRAINAGE								* 3.3						
SUBTOTAL	1692.4	2294.7	169.6	272.3	1964.3	1390.3	763.9	221.8	763.9	14541.7	629.6	23.6	4457.6	310
ROUNDING	0.6	0.2	10.4	7.6	0.7	59.7	36.1	18.2	36.1	258.3	10.4	1.4	42.4	50
TOTAL	1693	2295	180	280	1965	1450	800	240	800	14800	640	25	4500	360

* SEE DRAINAGE SUMMARY

PAVEMENT MARKINGS				
ITEM NO.	632.0104	632.3104	632.3118	632.32
DESCRIPTION	RETRO-REFLECTIVE PAINT PAVE. MARKING, 4" LINE	RETRO-REFLECT. THERMOPLAS. PAVE. MARKING, 4" LINE	RETRO-REFLECT. THERMO-PLAS. PAVE. MARKING, 18" LINE	RETRO-REFLECT. THERMO-PLAS. PAVE. MARKING, SYMBOL OR WORD
UNIT	LF	LF	LF	SF
NH 28 BYPASS	17308	240	46	112.8
ENGLISH RANGE ROAD	300		25	
SCOBIE POND ROAD	300		22	
SUBTOTAL	17908	240	93	112.8
ROUNDING	92	10	7	7.2
TOTAL	18000	250	100	120

INCIDENTAL ITEMS			
ITEM NO.	DESCRIPTION	UNIT	TOTAL
201.882	INVASIVES SPECIES CONTROL TYPE II	SY	370
206.19	COMMON STRUCTURE EXCAVATION EXPLORATORY	CY	10
214.	FINE GRADING	U	1
403.99	TEMPORARY BITUMINOUS PAVEMENT	TONS	20
611.90001	ADJUSTING WATER GATES AND SHUTOFFS SET BY OTHERS	EA	1
611.9514	BOARD INSULATION, 4" THICK	SY	7.1
616.101	TRAFFIC SIGNALS	U	1
618.61	UNIFORMED OFFICERS WITH VEHICLE	\$	23,000
618.7	FLAGGERS	HR	1,000
619.1	MAINTENANCE OF TRAFFIC	U	1
619.25	PORTABLE CHANGEABLE MESSAGE SIGN	U	2
645.512	COMPOST SOCK FOR PERIMETER BERM	LF	1,600
645.531	SILT FENCE	LF	3,100
645.7	STORM WATER POLLUTION PREVENTION PLAN	U	1
645.71	MONITORING SWPPP AND EROSION AND SEDIMENT CONTROLS	HR	40
670.066	MAILBOX SUPPORT ASSEMBLIES	EA	11
692.	MOBILIZATION	U	1
697.11	INVASIVE SPECIES CONTROL AND MANAGEMENT PLAN	U	1
697.31	PROJECT OPERATIONS PLAN	U	1
698.13	FIELD OFFICE TYPE C	MON	8
699.	MISCELLANEOUS TEMPORARY EROSION AND SEDIMENT CONTROL	\$	10,000
1010.15	FUEL ADJUSTMENT	\$	19,975
1010.2	ASPHALT CEMENT ADJUSTMENT	\$	10,000
1010.3	QUALITY CONTROL QUALITY ASSURANCE (QC/QA) ASPHALT	\$	8,000

PERMANENT CONSTRUCTION SIGNS									
(INCLUDED IN ITEM NO. 619.1)									
SIGN NO.	DESCRIPTION	SIZE (ft)		SF	NO. REQ.	TOTAL AREA (SF)	PORTABLE MOUNTS	U-CHANNEL POSTS	REMARKS
		W	H						
R50-1	"NH LAW WORK ZONE"	6	4	24	2	48		4	BLACK/WHITE
W20-1b	"ROAD WORK 500 FT"	4	4	16	2	32		4	BLACK/FLUORESCENT ORANGE
W20-1c	"ROAD WORK 1000 FT"	4	4	16	2	32		4	BLACK/FLUORESCENT ORANGE
W20-1e	"ROAD WORK 1/2 MILE"	4	4	16	2	32		4	BLACK/FLUORESCENT ORANGE
G20-2a	"END ROAD WORK"	4	2	8	4	32		8	BLACK/ORANGE

The estimated quantities of "Permanent Controls" are hereby listed. The Contractor is responsible for all "Operational Controls"

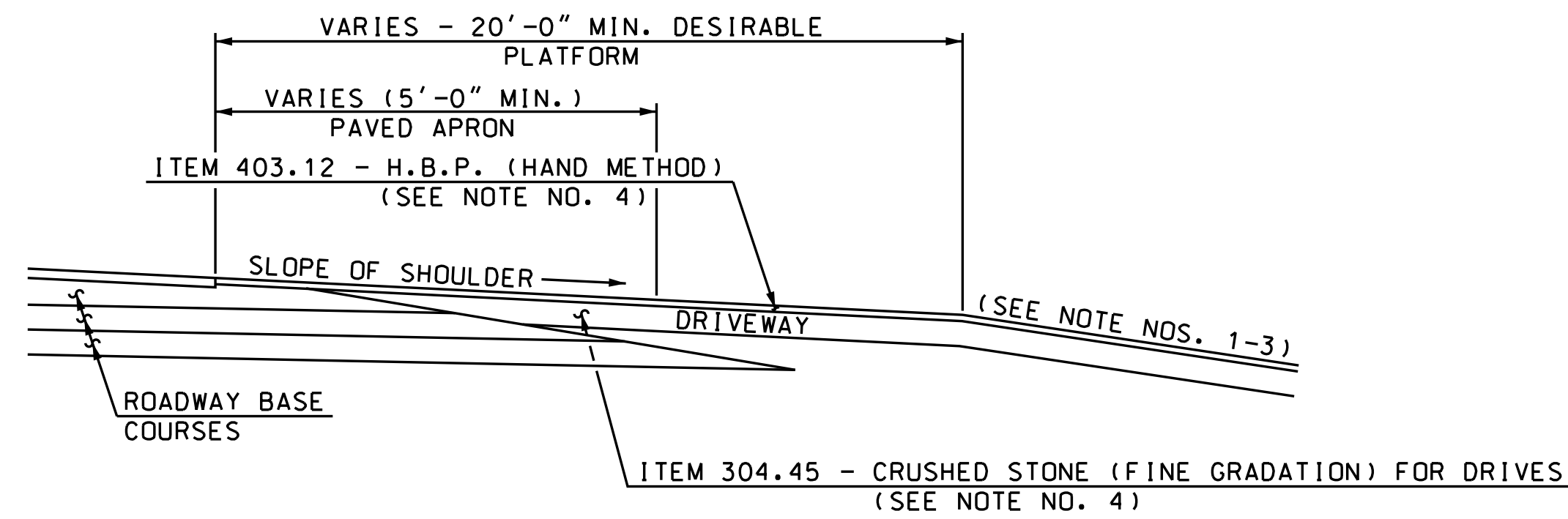
PERMANENT SIGNING			
ITEM NO.	DESCRIPTION	UNIT	TOTAL
615.0301	TRAFFIC SIGN TYPE C	SF	70
615.033	REMOVING TRAFFIC SIGN, TYPE C	U	8
615.034	RELOCATING TRAFFIC SIGN, TYPE C	U	4
615.0601	TRAFFIC SIGN TYPE CC	SF	16

NON-PARTICIPATING*			
ITEM NO.	DESCRIPTION	UNIT	TOTAL
611.90001	ADJUSTING WATER GATES AND SHUTOFFS SET BY OTHERS	EA	5
611.9514	BOARD INSULATION, 4" THICK	SY	14.2
1010.15	FUEL ADJUSTMENT	\$	25

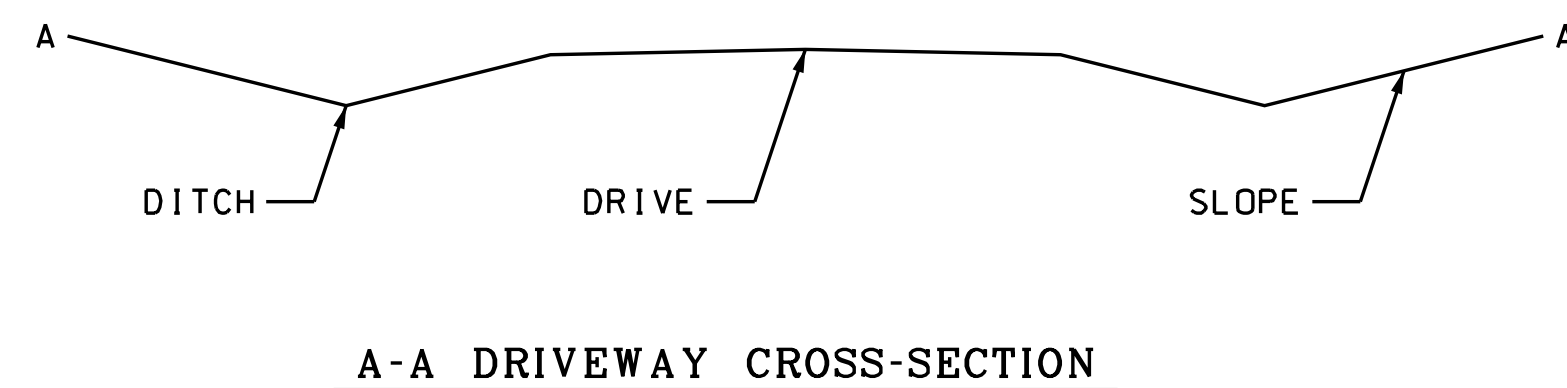
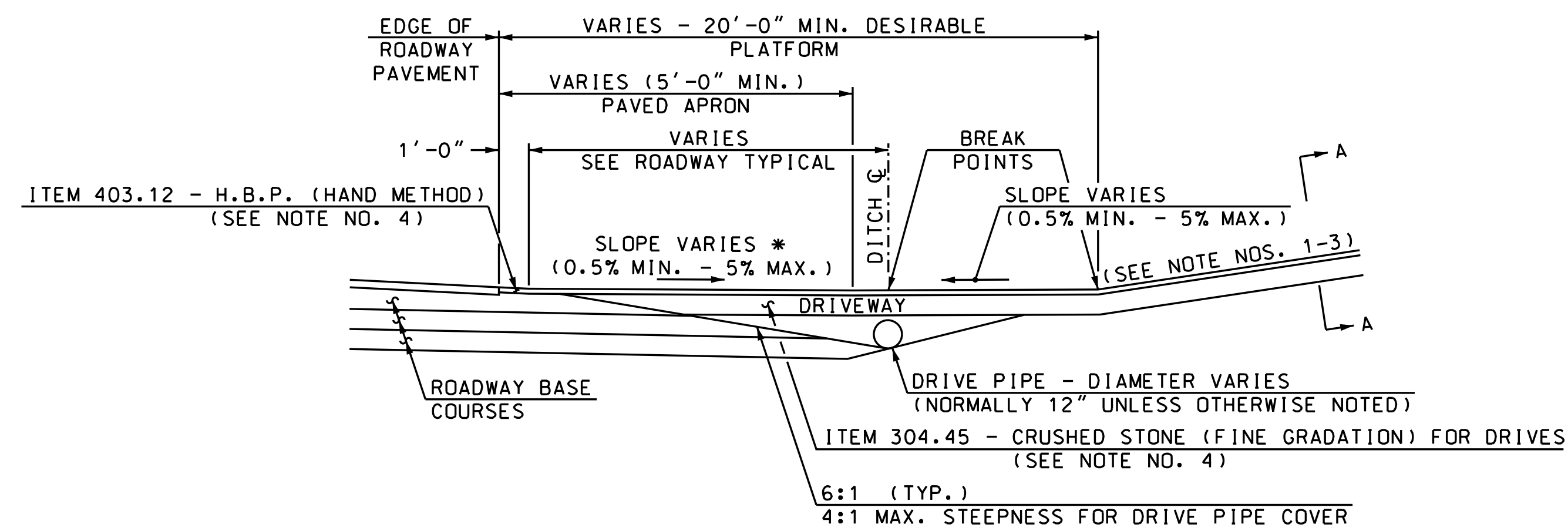
*Work completed on Town Roads of these items use the equivalent Participating Item

WORK COMPLETED BY OTHERS
TOWN OF DERRY - BOARD INSULATION AND ADJUSTING WATER GATES AND SHUTOFFS

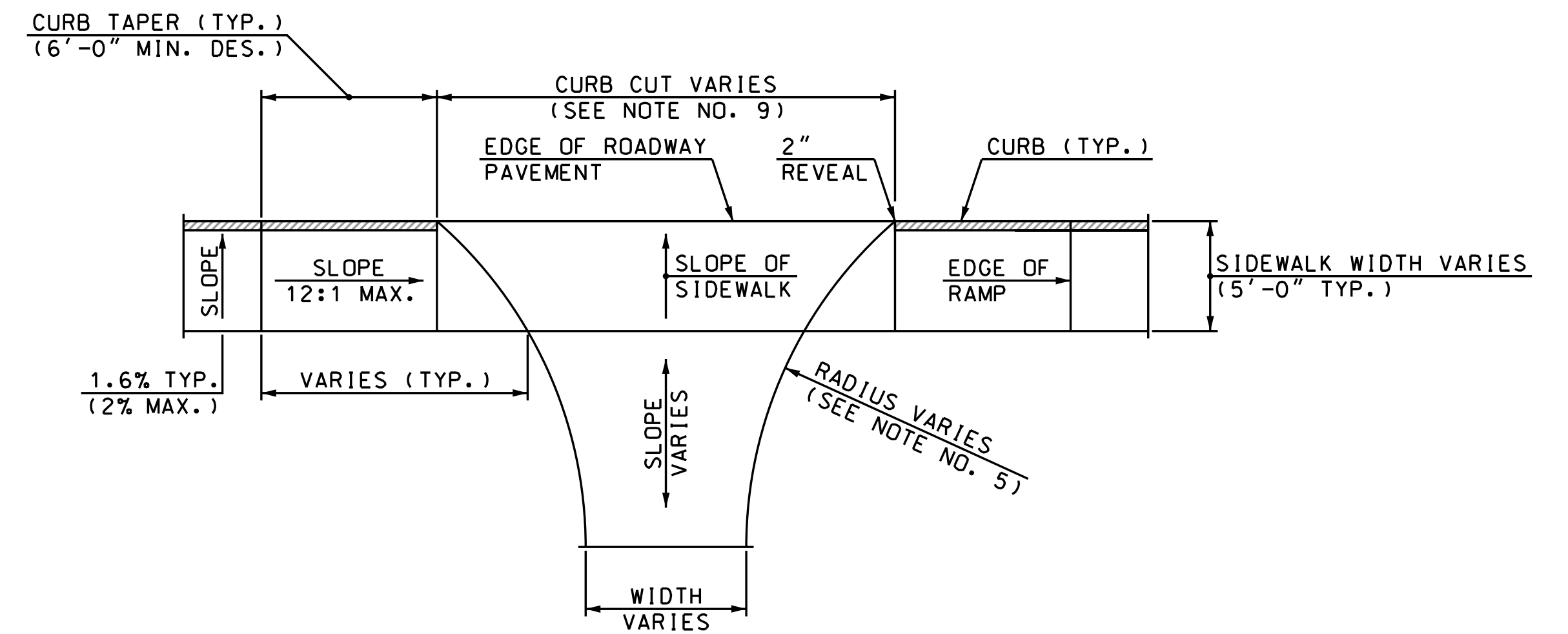
NOTE: REFER TO PAVEMENT LAYOUT PLANS AND CROSS-SECTIONS FOR DRIVEWAY LENGTHS, WIDTHS, RADII, CURB CUTS, GRADES AND PAVEMENT & BASE COURSE DEPTHS



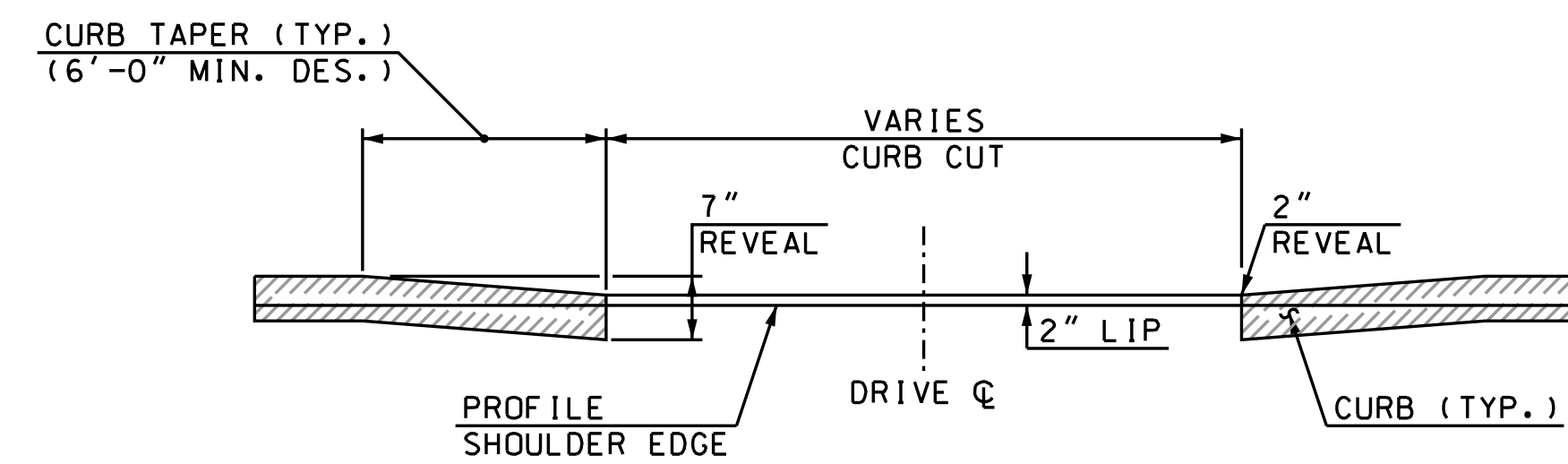
TYPICAL UNCURBED DRIVE IN FILL SECTION



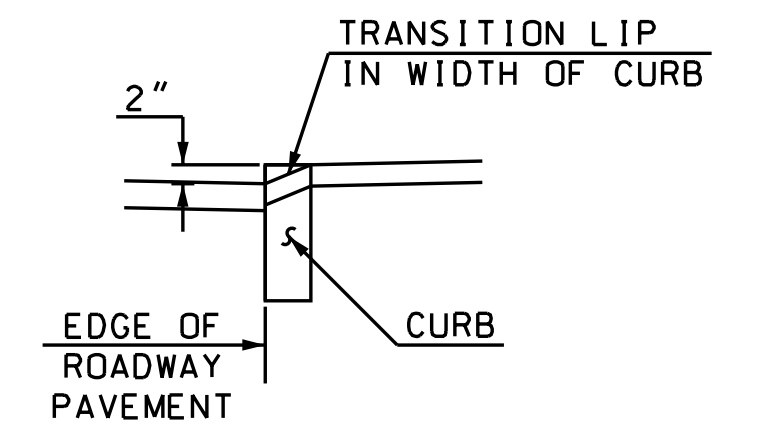
TYPICAL UNCURBED DRIVE IN CUT SECTION



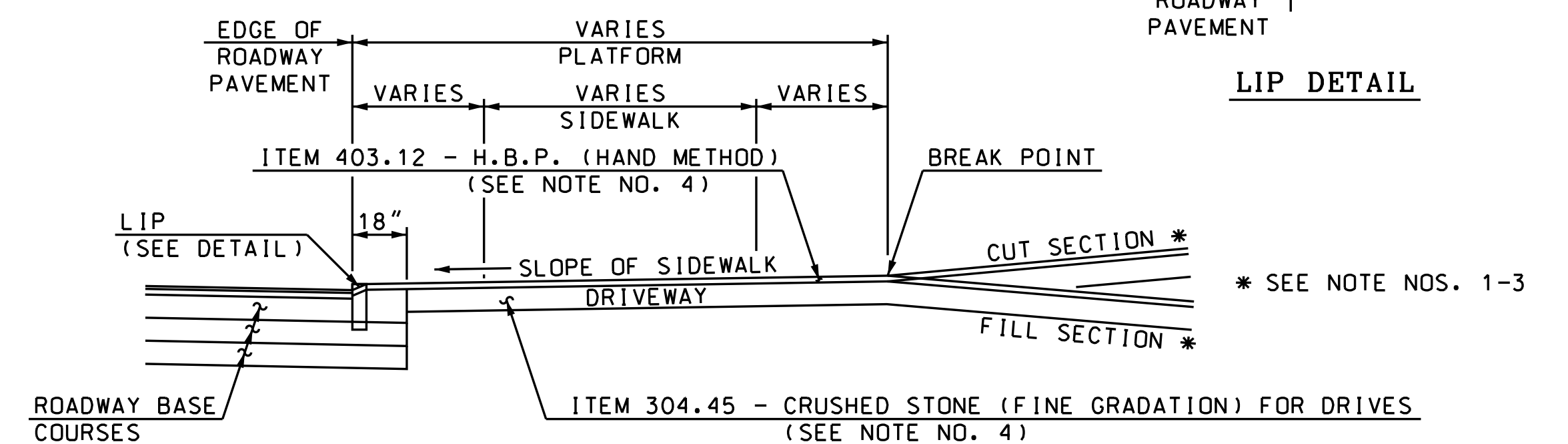
PLAN VIEW WITH SIDEWALK RAMP



END VIEW



LIP DETAIL



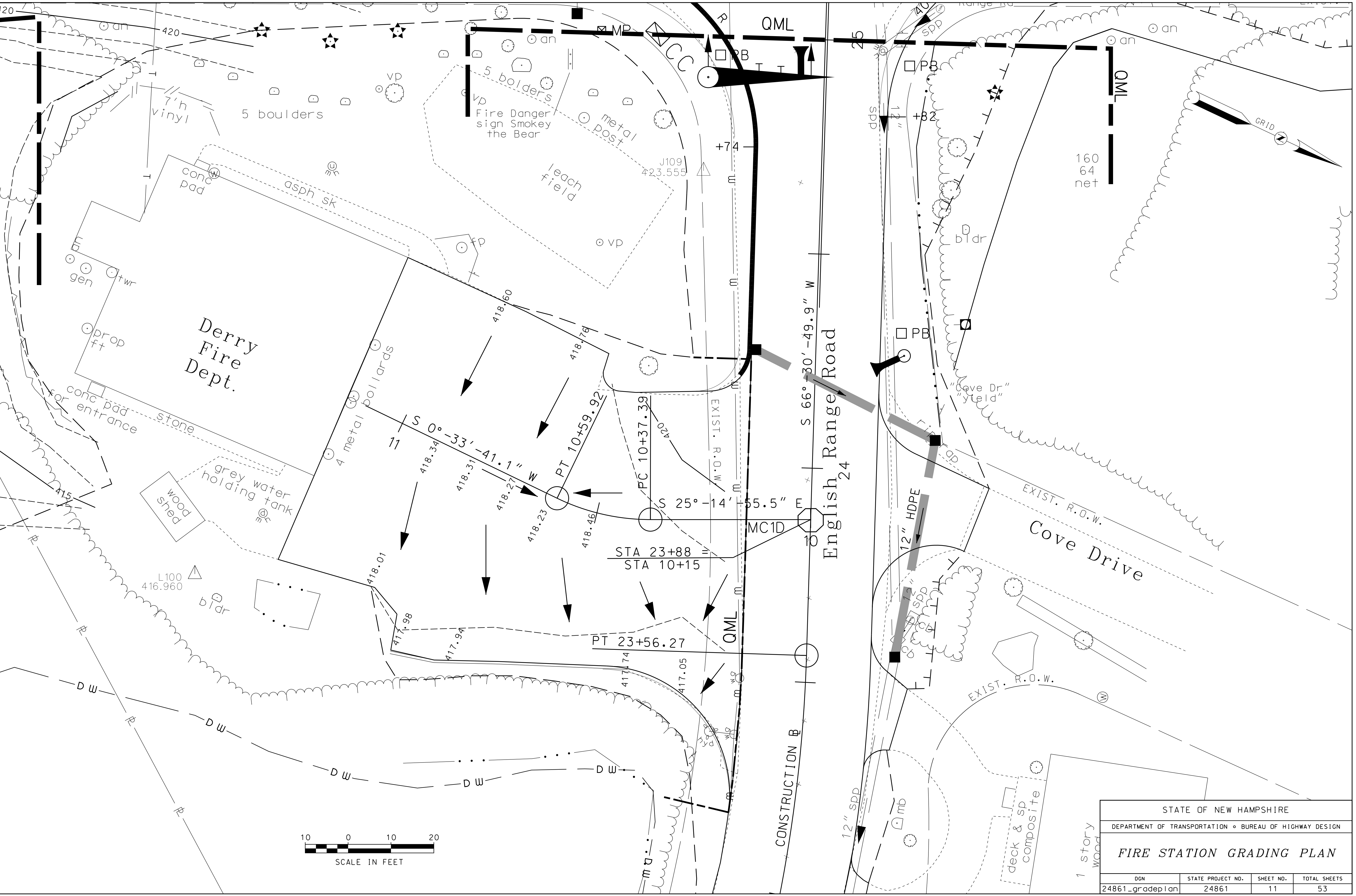
TYPICAL URBAN CURBED DRIVE IN CUT/FILL SECTION

GENERAL NOTES

- GRADES OF MAJOR ENTRANCES BEYOND THE PLATFORM SHOULD NOT EXCEED 8%.
- GRADES OF OTHER DRIVES BEYOND THE PLATFORM SHOULD NOT EXCEED 15%.
- THE ALGEBRAIC DIFFERENCE BETWEEN TWO ADJACENT GRADES SHOULD NOT EXCEED 10%.
- PAVEMENT AND BASE COURSE DEPTHS ARE:
 - TYPICALLY 8" CRUSHED GRAVEL WITH 3" HBP (HAND METHOD, PLACED IN 2 COURSES) FOR RESIDENTIAL DRIVES ADJACENT TO ROADWAYS WITH CONVENTIONAL CRUSHED GRAVEL, GRAVEL, AND SAND STRUCTURAL BOX. IF THE DRIVE IS ADJACENT TO A ROADWAY WITH A CRUSHED STONE STRUCTURAL BOX, 6" OF CRUSHED STONE FINE GRADATION MAY BE SUBSTITUTED FOR THE 8" OF CRUSHED GRAVEL NOTED ABOVE.
 - TYPICALLY 12" CRUSHED GRAVEL WITH 3" HBP (HAND METHOD, PLACED IN 2 COURSES) FOR COMMERCIAL DRIVES WITH FREQUENT HEAVY TRUCK TRAFFIC THAT ARE ADJACENT TO ROADWAYS WITH CONVENTIONAL CRUSHED GRAVEL, GRAVEL, AND SAND STRUCTURAL BOX. IF THE DRIVE IS ADJACENT TO A ROADWAY WITH A CRUSHED STONE STRUCTURAL BOX, 9" OF CRUSHED STONE FINE GRADATION MAY BE SUBSTITUTED FOR THE 12" OF CRUSHED GRAVEL NOTED ABOVE.
- FOR DESIGN CRITERIA AND OTHER ADDITIONAL INFORMATION, REFER TO THE NHDOT DRIVEWAY MANUAL.
- DITCHES ARE RECOMMENDED FOR UNCURBED DRIVEWAYS IN CUT SLOPES.
- USE SLOPED END SECTIONS ON DRIVE PIPES FOR UNCURBED DRIVEWAYS.
- CURBING CAN BE FLARED TO FIT DRIVE RADII IF APPROPRIATE OR ENDED AS DETAILED ABOVE.
- CURB CUTS FOR RESIDENTIAL DRIVES WITH ANGLES OF ENTRY OF 75°-90° ARE TYPICALLY 25'-0".

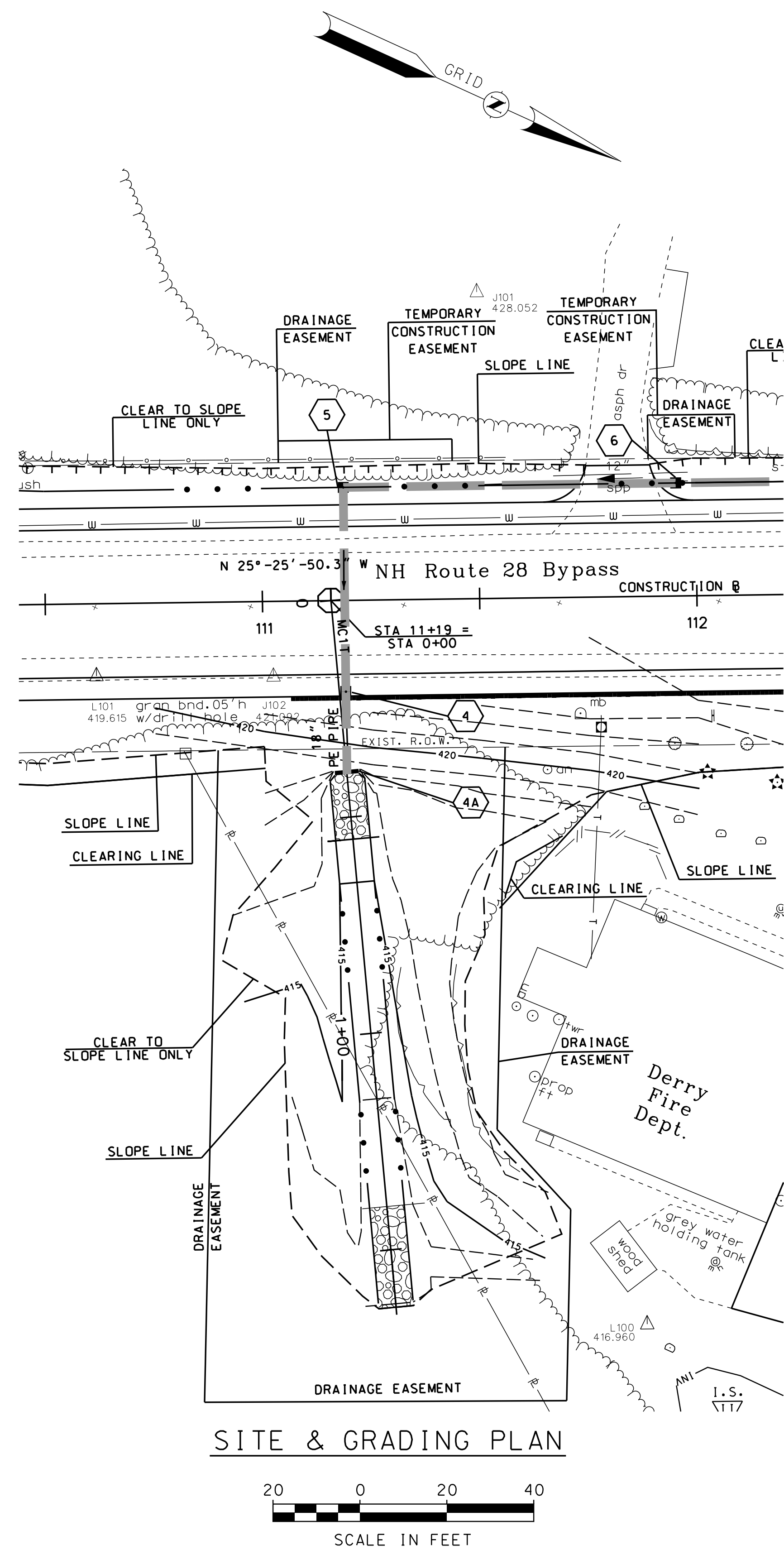
STATE OF NEW HAMPSHIRE				
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN				
DRIVEWAY DETAILS				
REVISION DATE	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
06/04/12	24861driveway	24861	10	53

SDR PROCESSED	DATE	8/2018	REVISIONS AFTER PROPOSAL
NEW DESIGN	ENP	8/2018	STATION
SHEET CHECKED	SDF	8/2018	DATE
AS BUILT DETAILS	DATE		NUMBER

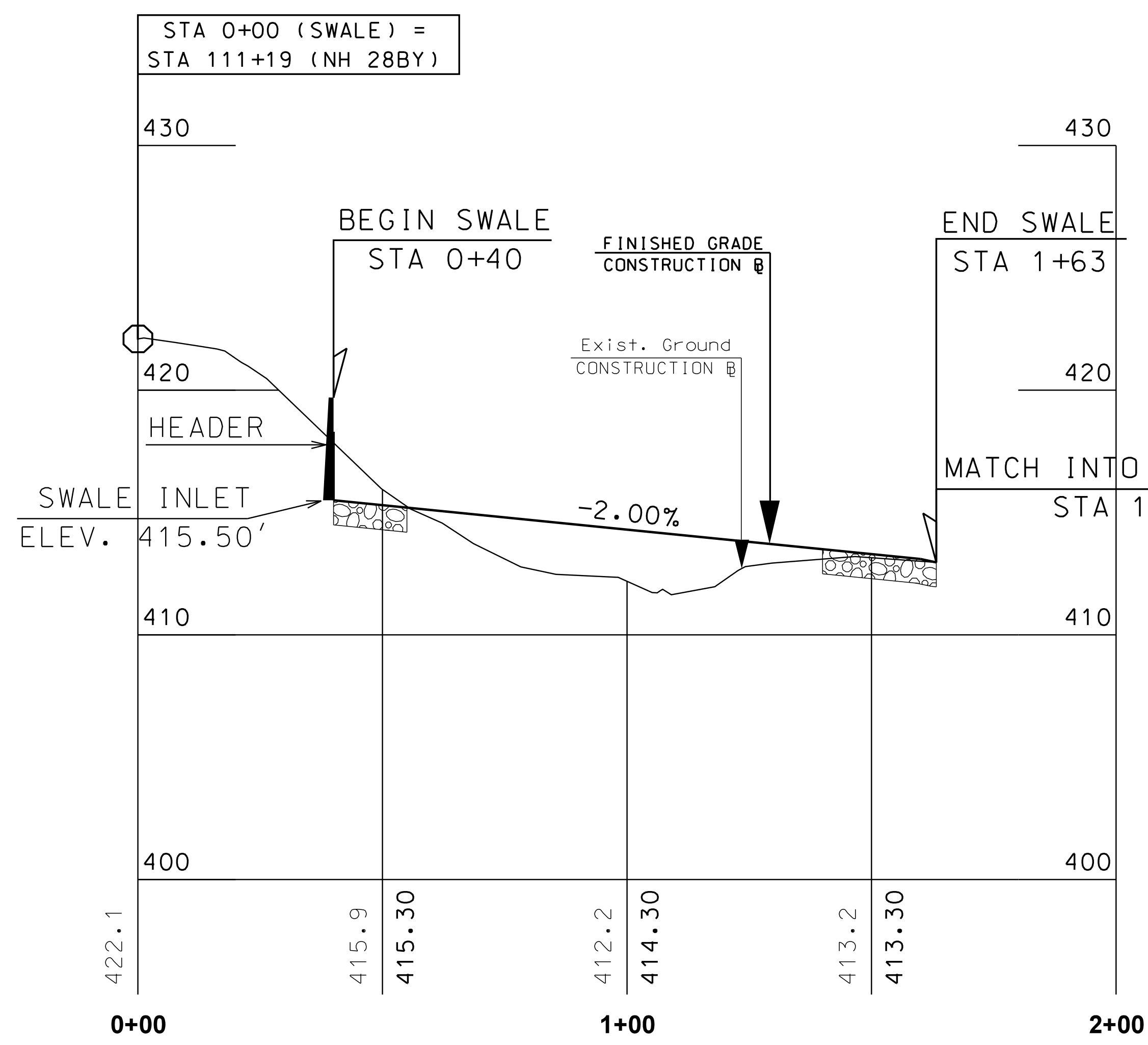


STATE OF NEW HAMPSHIRE			
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN			
FIRE STATION GRADING PLAN			
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
24861_gradep1an	24861	11	53

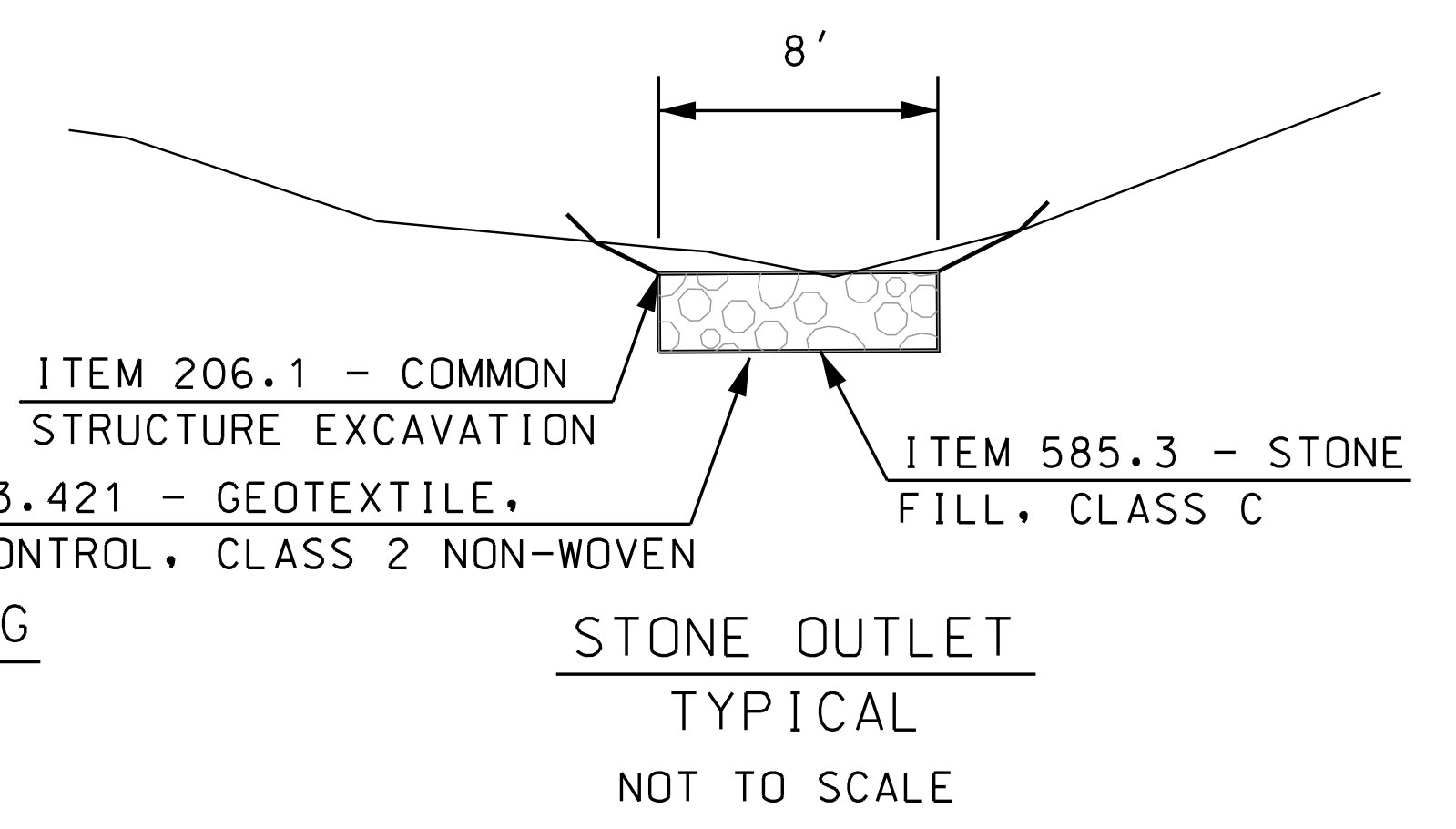
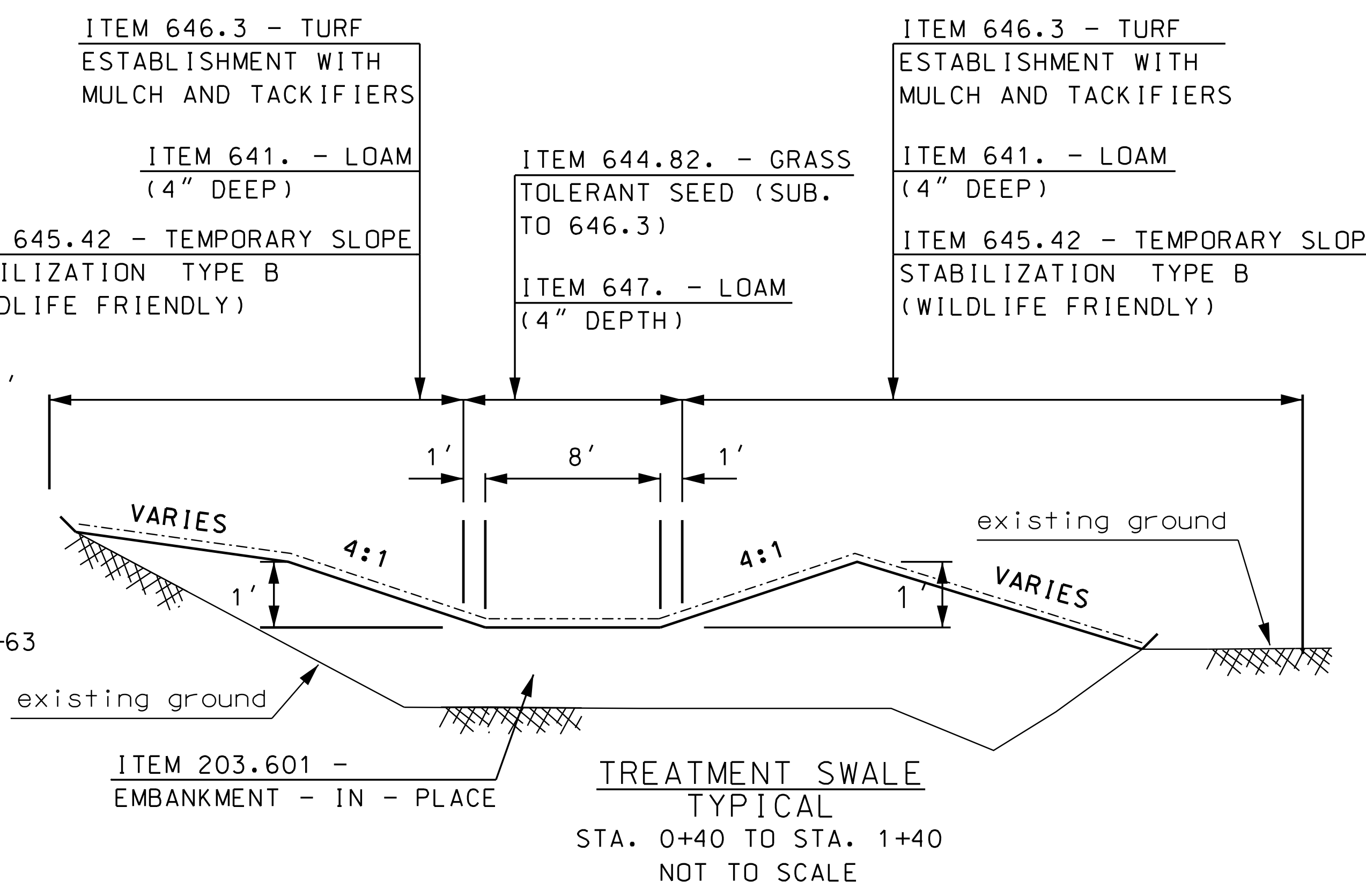
SDR PROCESSED	DATE	8/2018
NEW DESIGN	ENP	8/2018
SHEET CHECKED	SDF	8/2018
AS BUILT DETAILS	DATE	



4A STA 111+19, RT 40.1' TO 111+19, RT 203.1'
 STA 0+40 TO 1+63 (SWALE ALIGNMENT)
 CONSTRUCT TREATMENT SWALE TYPICAL
 15" INV. IN = 415.50'
 SWALE INV. OUT = 413.30'
 CONSTRUCT CALSS C STONE APRON 20' LONG
 FROM STS 0+40 TO 0+55 & STA 1+40 TO 1+63
 (SEE STONE OUTLET TYPICAL)



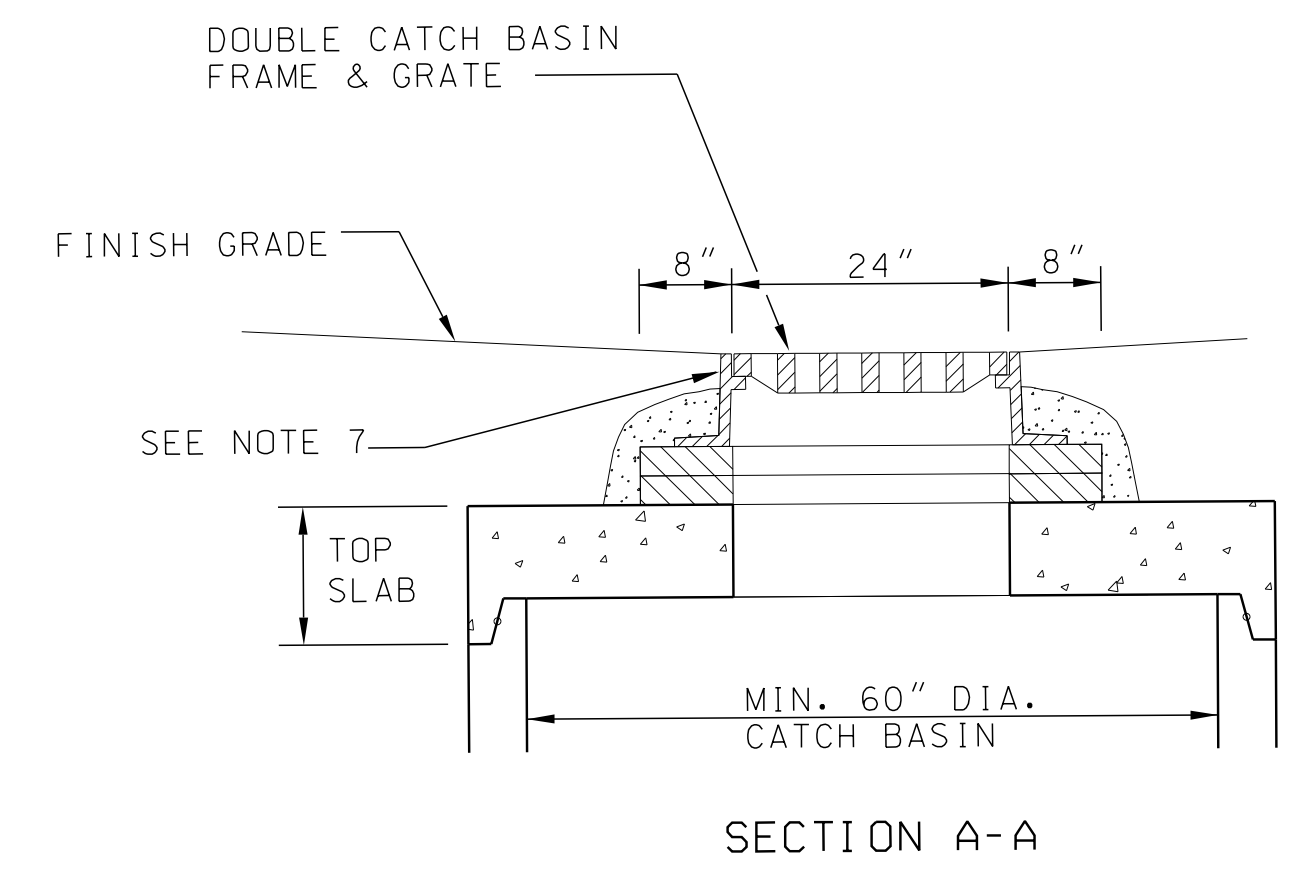
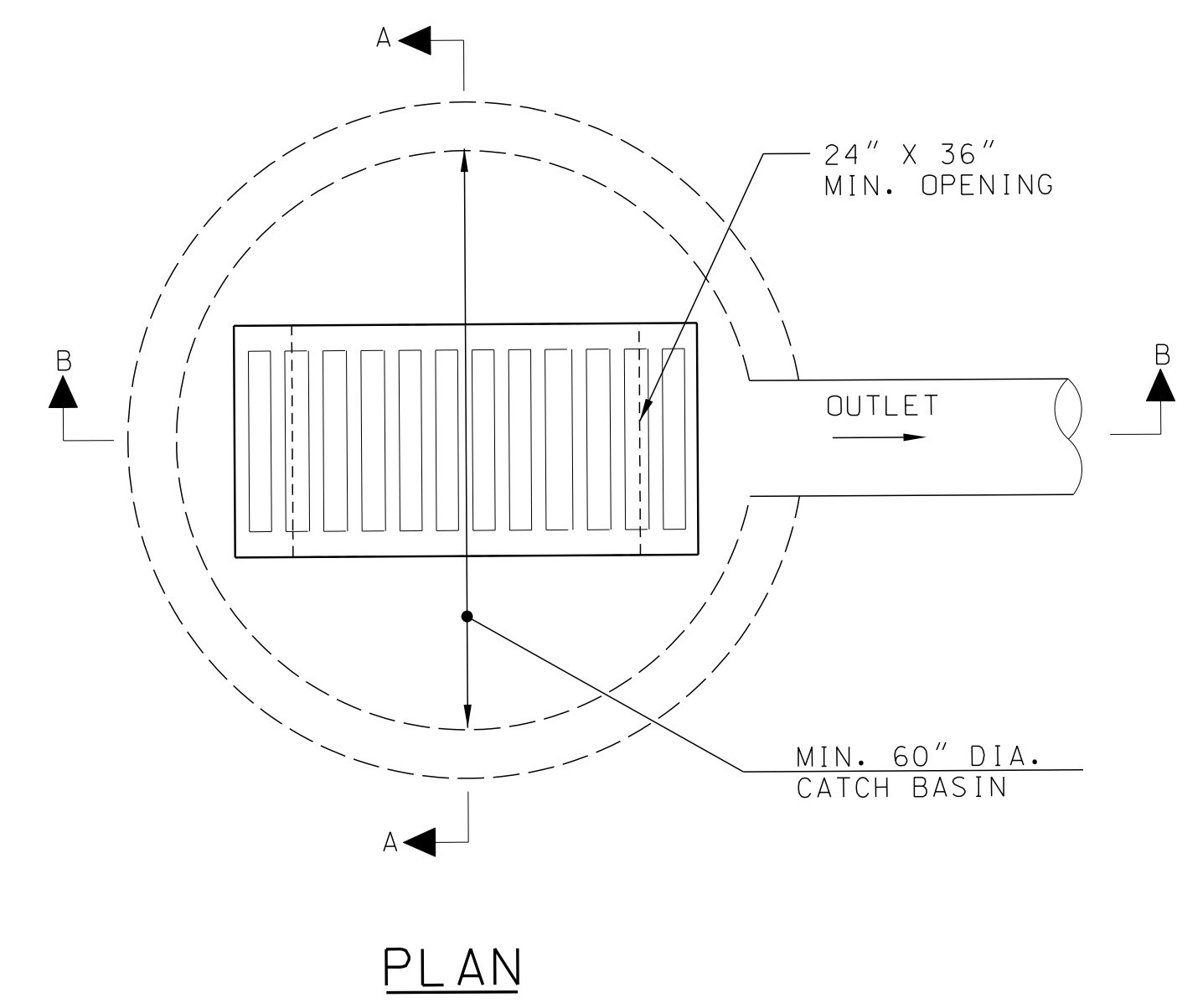
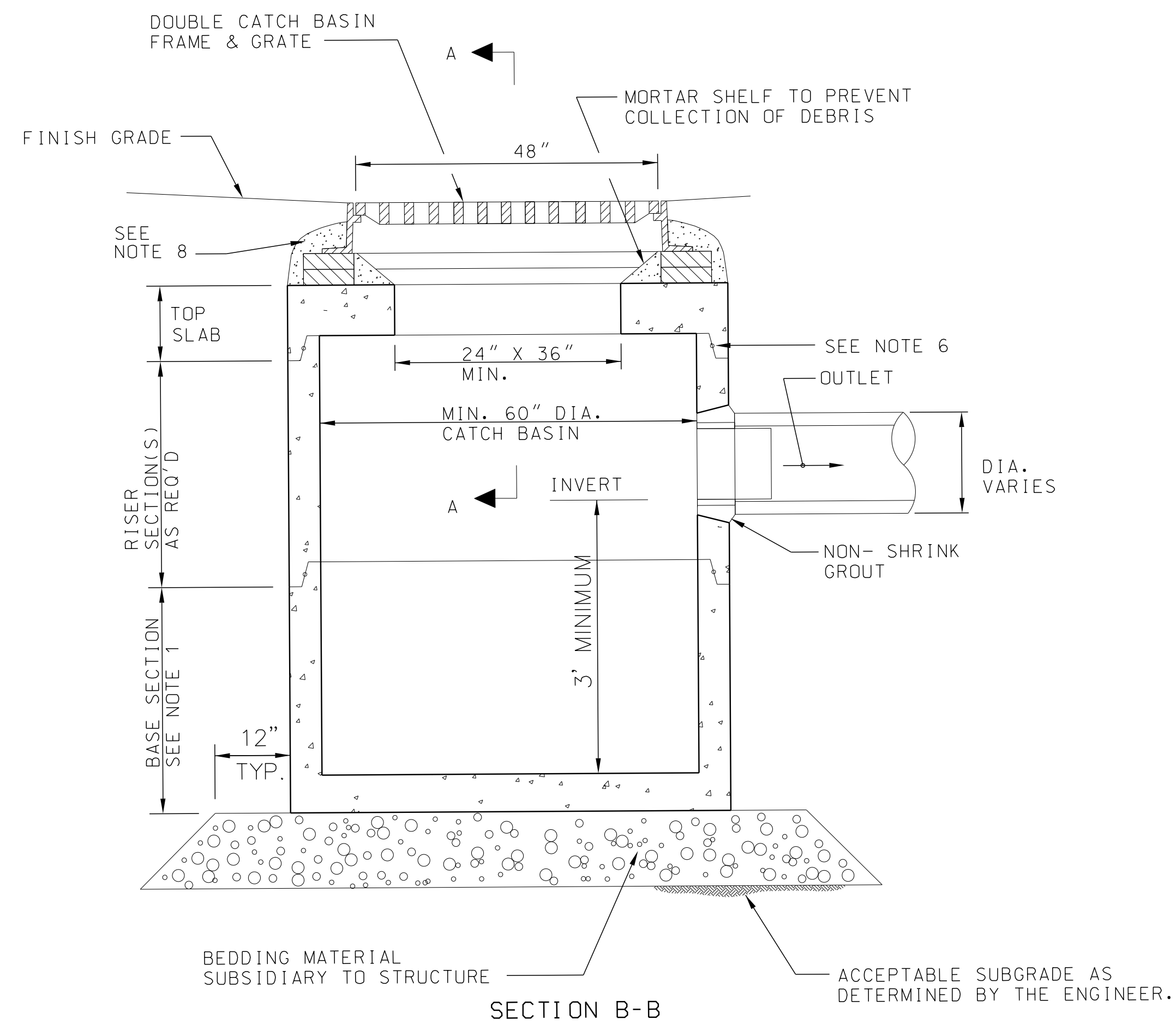
SCALE:
 1" = 20' HORIZ.
 1" = 10' VERT.



GENERAL NOTES:

1. ALL GEOTEXTILE SHALL WRAP TO FULL DEPTH OF STONE
2. WRAP GEOTEXTILE AT THE EDGE OF RIVER BACK INTO STONE FOR A LENGTH OF 5'.
3. REFER TO SWALE CROSS SECTIONS FOR MORE INFORMATION.

STATE OF NEW HAMPSHIRE			
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN			
TREATMENT SWALE DETAILS			
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
24861Drain_Dets	24861	13	53



5' DIAMETER CATCH BASIN FOR DOUBLE GRATE

NOT TO SCALE
 (SEE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION)
 ITEM 604.1652 - CB TYPE F, 5' DIAMETER
 DOUBLE GRATE

NOTES:

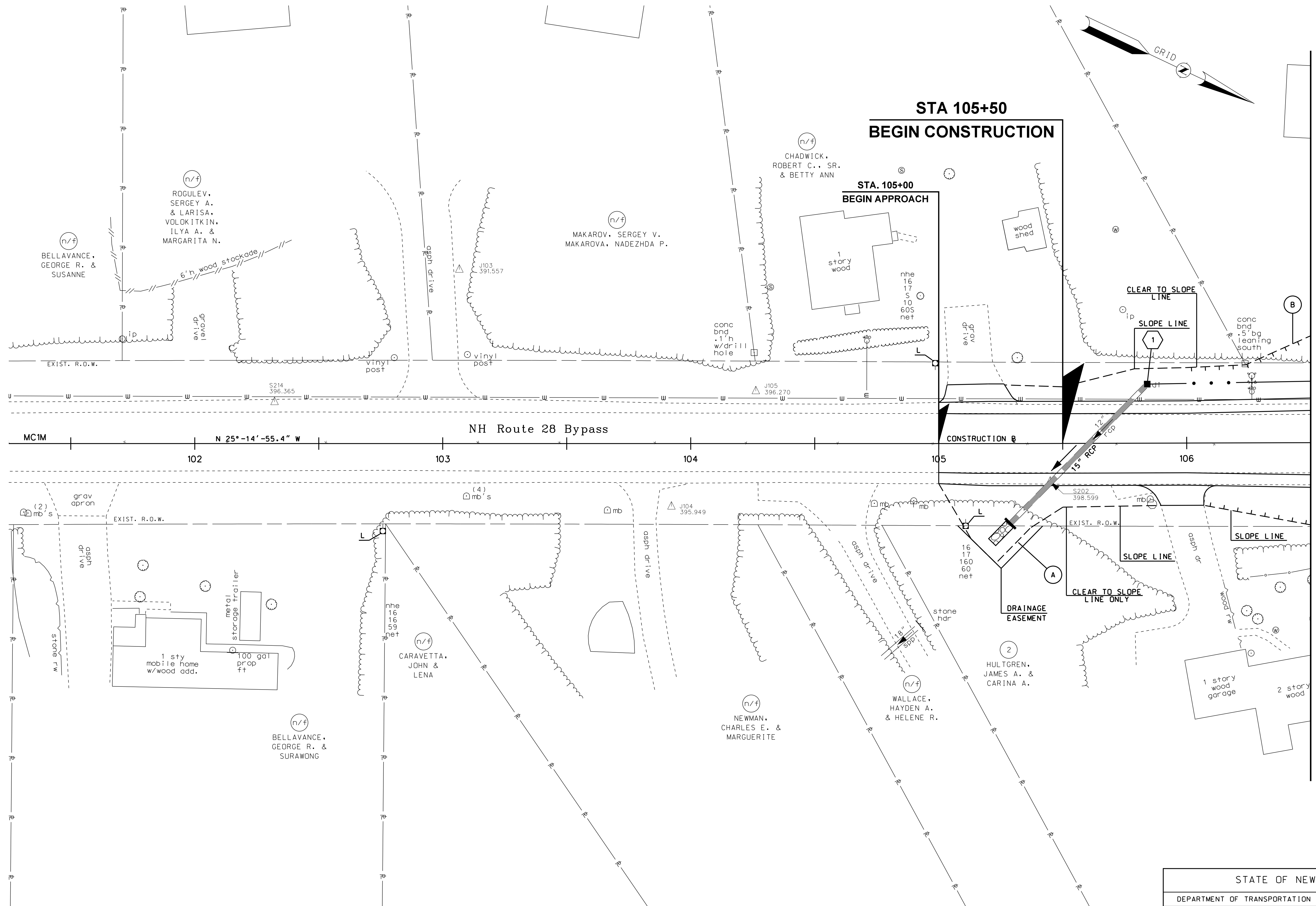
1. BASE SECTION SHALL BE MONOLITHIC WITH A MINIMUM 60" INSIDE DIAMETER.
2. ALL SECTIONS SHALL BE DESIGNED FOR HL-93 LOADING.
3. CONCRETE SHALL BE COMPRESSIVE STRENGTH 4000 PSI, NHDOT CLASS AA CEMENT. IN ACCORDANCE WITH SPECIFICATION SECTION 520
4. FRAMES AND GRATES SHALL BE HEAVY DUTY TYPE F AND DESIGNED FOR HL-93 LOADING.
5. PROVIDE "V" KNOCKOUTS FOR PIPES UTILIZING NHDOT GUIDELINES. MORTAR ALL PIPE CONNECTIONS.
6. ALL DOUBLE CATCH BASIN FRAMES AND GRATES SHALL BE NHDOT CATCH BASIN TYPE F, WITH 3-FLANGE FRAMES OR A SINGLE FRAME CAPABLE OF HOLDING TWO GRATES.
7. STANDARD DOUBLE CATCH BASIN FRAME AND GRATE(S) SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICK COURSES TYPICALLY, 5 BRICK COURSES MAXIMUM)

SDR PROCESSED	DATE	8/2018
NEW DESIGN	DATE	8/2018
SHEET CHECKED	DATE	8/2018
AS BUILT DETAILS	DATE	

STATE OF NEW HAMPSHIRE			
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN			
CATCH BASIN WITH DOUBLE GRATE DETAILS			
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
24861Drain_Dets	24861	14	53

SDR PROCESSED	SEL	DATE	9/2013
NEW DESIGN	ENP	DATE	8/2018
SHEET CHECKED	TWC	DATE	8/2018
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL	DESCRIPTION



MC1M N 25°-14'-55.4" W

NH Route 28 Bypass

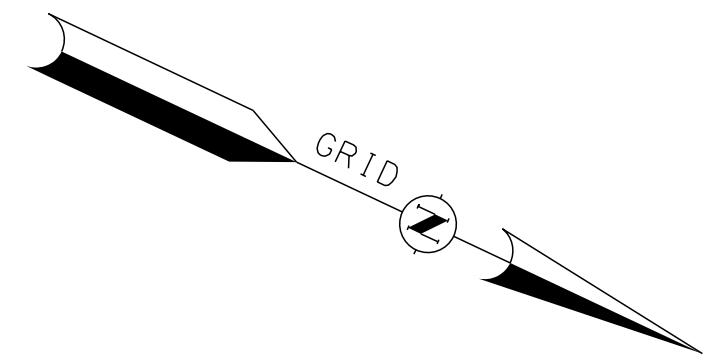
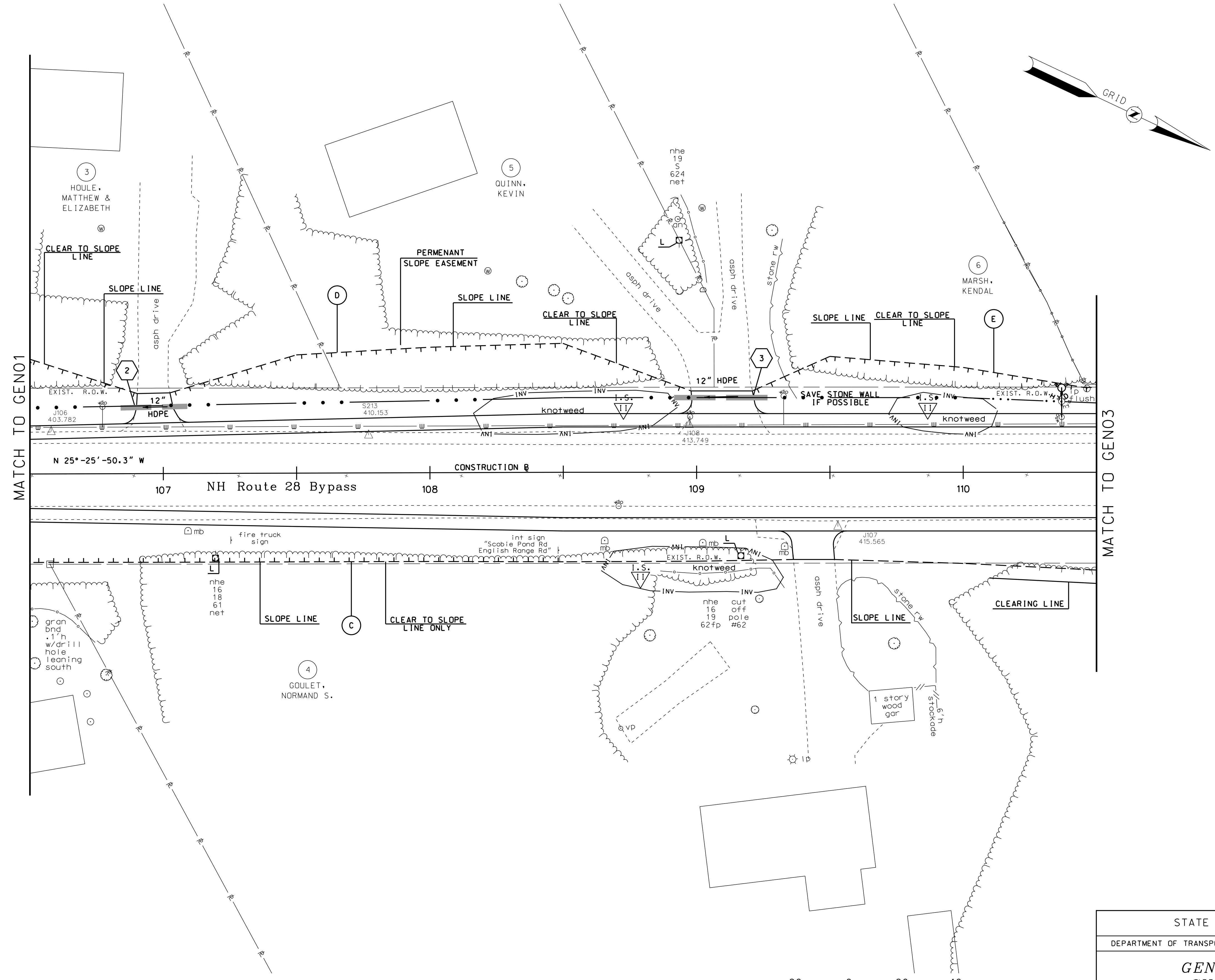
20 0 20 40

SCALE IN FEET

STATE OF NEW HAMPSHIRE				
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN				
GENERAL PLANS				
SHEET 1 OF 7				
MODEL	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
Gen01	24861Gen	24861	17	53

SDR PROCESSED	SEL	DATE	9/2013
NEW DESIGN	ENP	DATE	8/2018
SHEET CHECKED	TWC	DATE	8/2018
AS BUILT DETAILS		DATE	

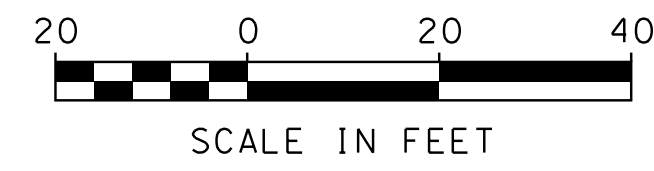
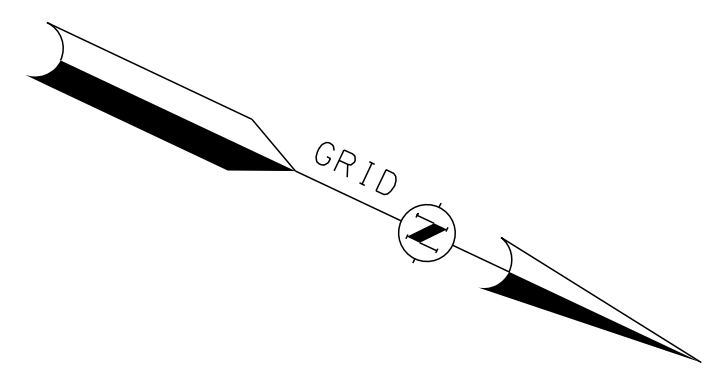
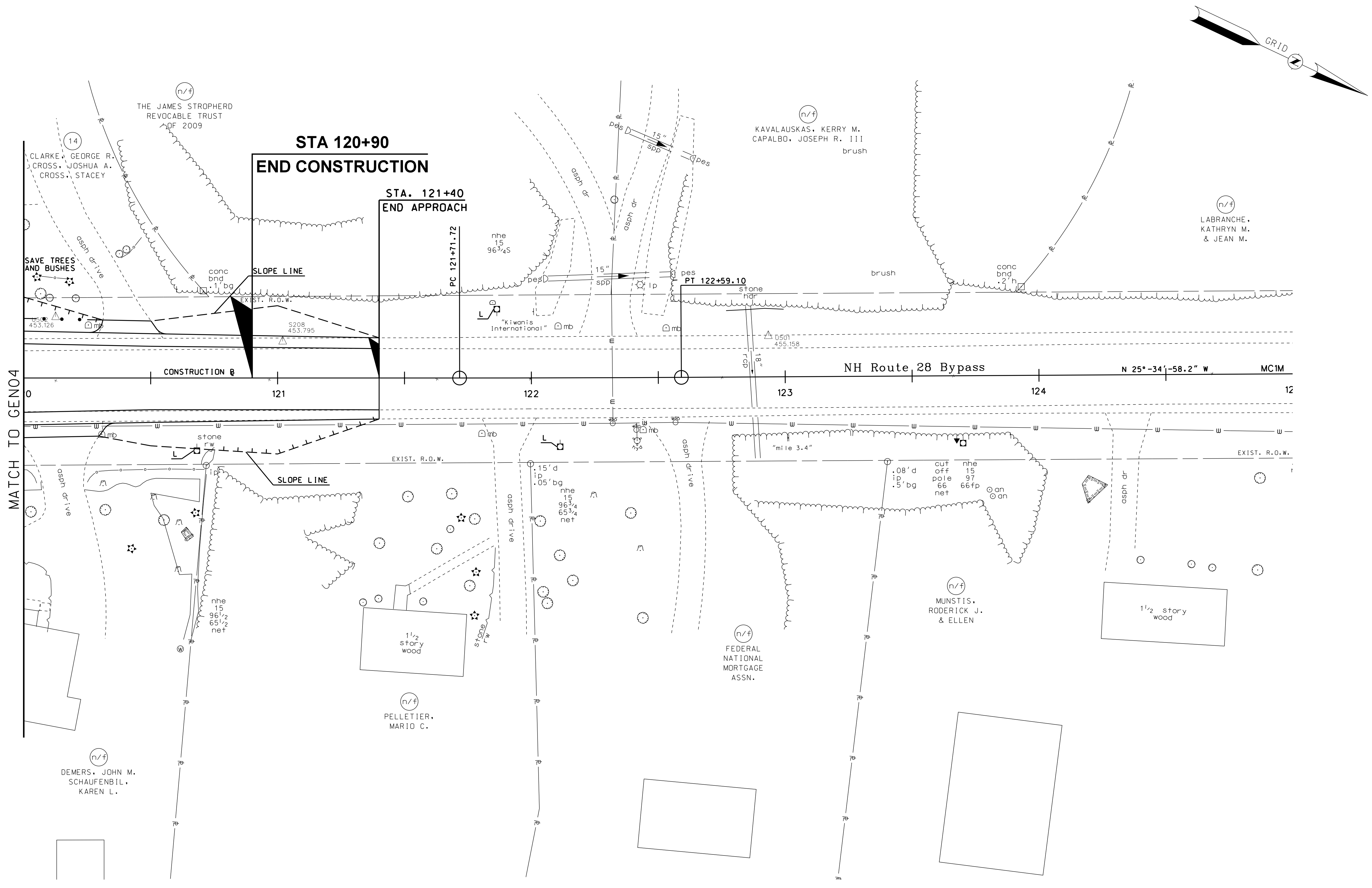
REVISIONS AFTER PROPOSAL	DESCRIPTION
STATION	
DATE	
NUMBER	



STATE OF NEW HAMPSHIRE				
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN				
GENERAL PLANS				
SHEET 2 OF 7				
MODEL	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
Gen02	24861Gen	24861	18	53

SDR PROCESSED	SEL	DATE	9/2013
NEW DESIGN	ENP	DATE	8/2018
SHEET CHECKED	TWC	DATE	8/2018
AS BUILT DETAILS		DATE	

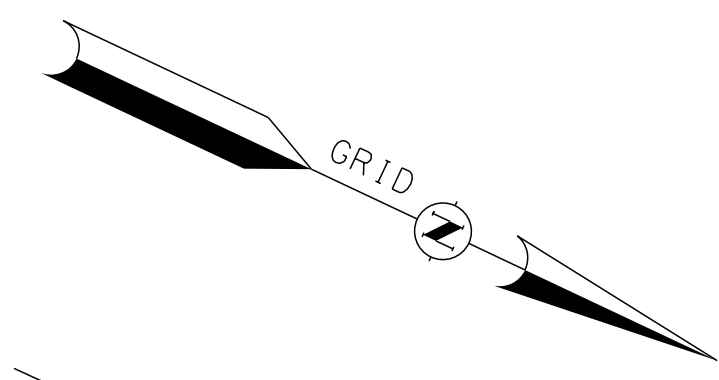
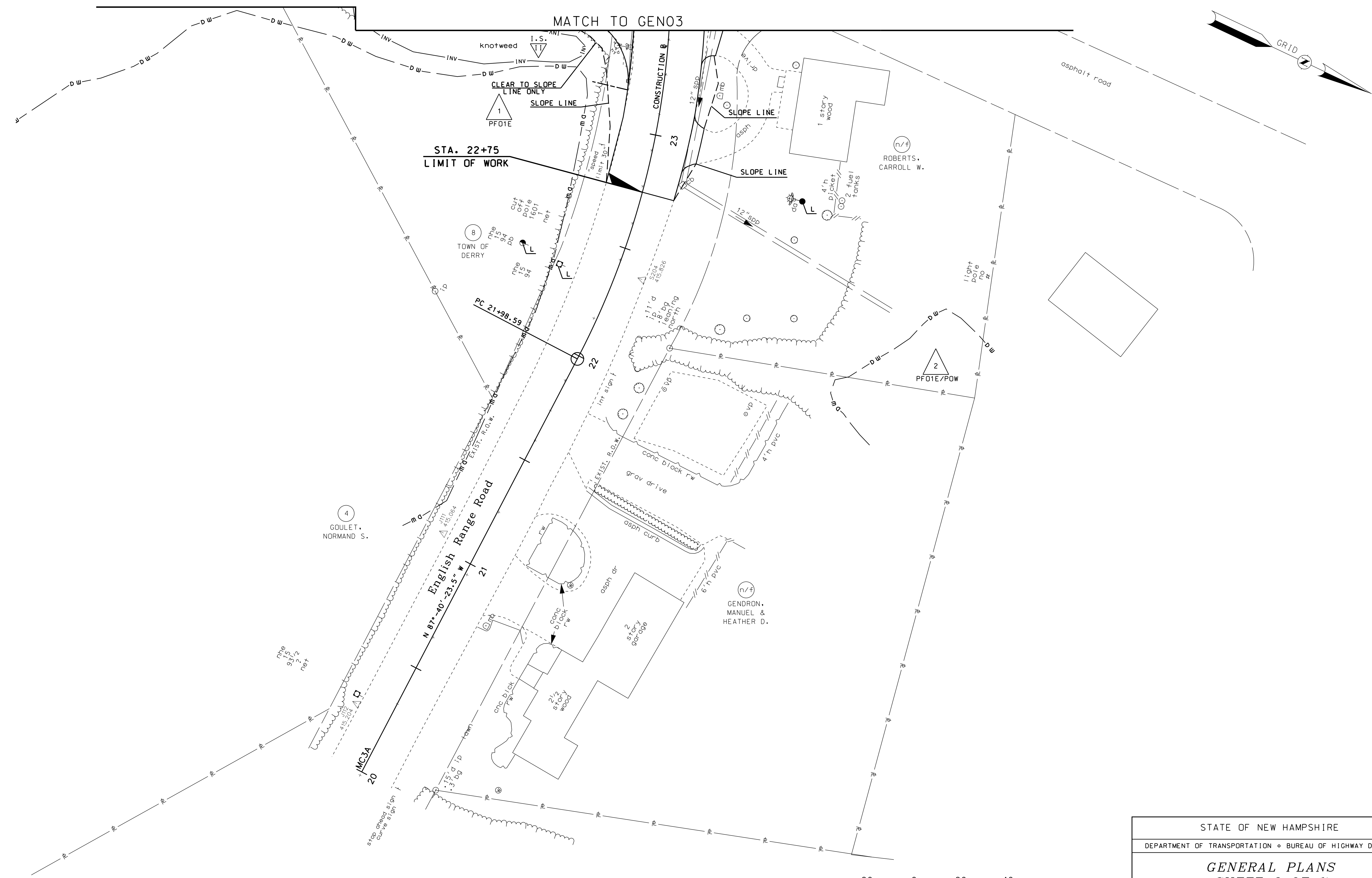
REVISIONS AFTER PROPOSAL	STATION	DESCRIPTION



STATE OF NEW HAMPSHIRE				
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN				
GENERAL PLANS				
SHEET 5 OF 7				
MODEL	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
Gen05	24861Gen	24861	21	53

SDR PROCESSED	SEL	DATE	9/2013
NEW DESIGN	ENP	DATE	8/2018
SHEET CHECKED	TWC	DATE	8/2018
AS BUILT DETAILS		DATE	

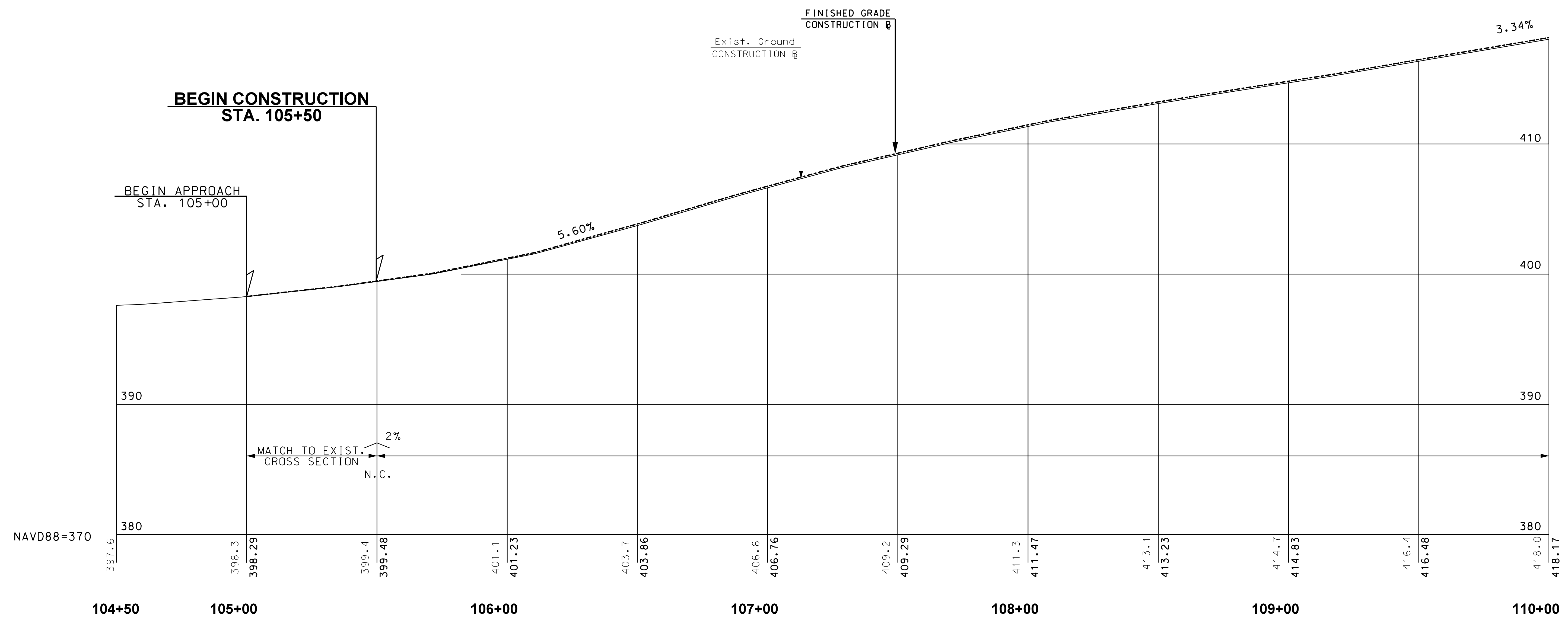
REVISIONS AFTER PROPOSAL	DESCRIPTION
NUMBER	DATE
STATION	STATION



STATE OF NEW HAMPSHIRE				
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN				
GENERAL PLANS				
SHEET 6 OF 7				
MODEL	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
Gen06	24861Gen	24861	22	53

SDR PROCESSED		DATE	DATE	DATE	DATE	DATE	DATE
NEW DESIGN		ENP	8/2018	8/2018	8/2018	8/2018	8/2018
SHEET CHECKED		TWC					
AS BUILT DETAILS							

REVISIONS AFTER PROPOSAL	STATION	DESCRIPTION



SEE PAVEMENT MATCH DETAIL FOR OVERLAY MATCH/BOX STEPS

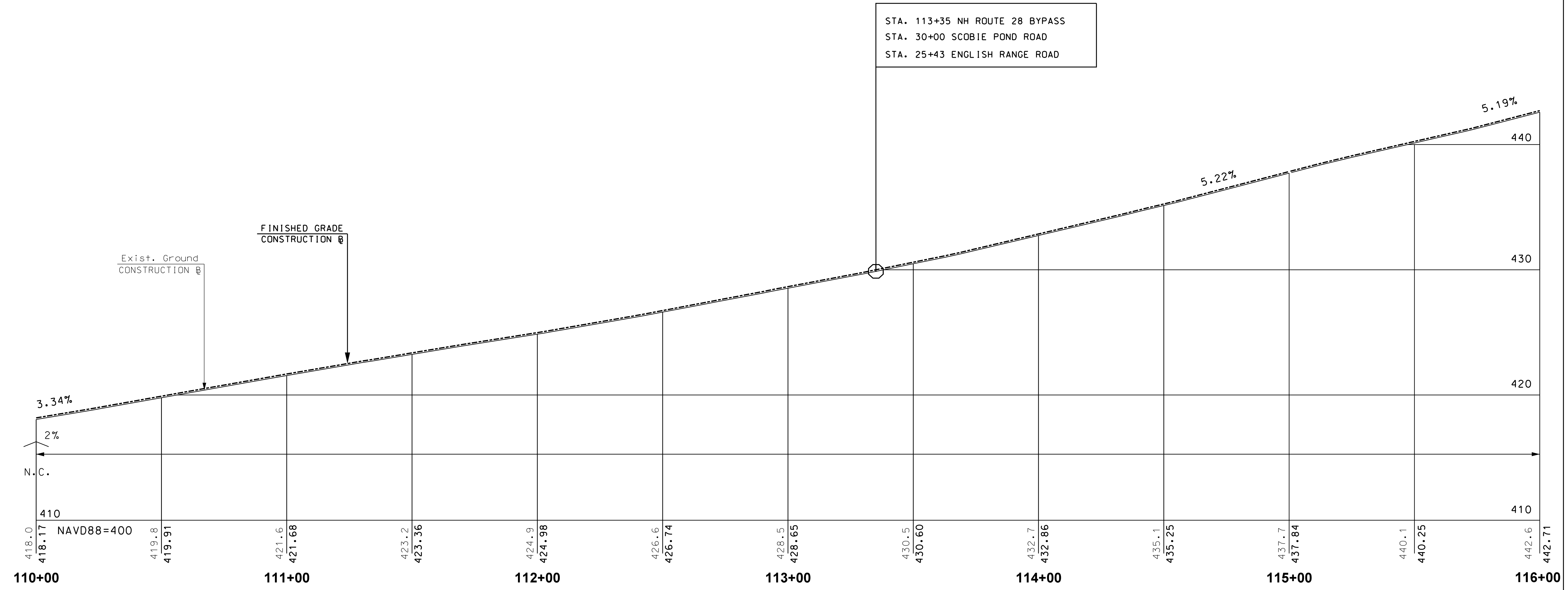
1 1/2" HOT BITUMINOUS PAVEMENT, MACHINE METHOD, HIGH STRENGTH (QC/QA TIER 2) WEARING COURSE

SCALE:
1" = 20' HORIZ.
1" = 4' VERT.

STATE OF NEW HAMPSHIRE			
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN			
NH 28 BYPASS PROFILE			
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
24861NH28_pro	24861	24	53

SDR PROCESSED		DATE	8/2018
NEW DESIGN		DATE	8/2018
SHEET CHECKED		DATE	8/2018
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL	STATION	DESCRIPTION



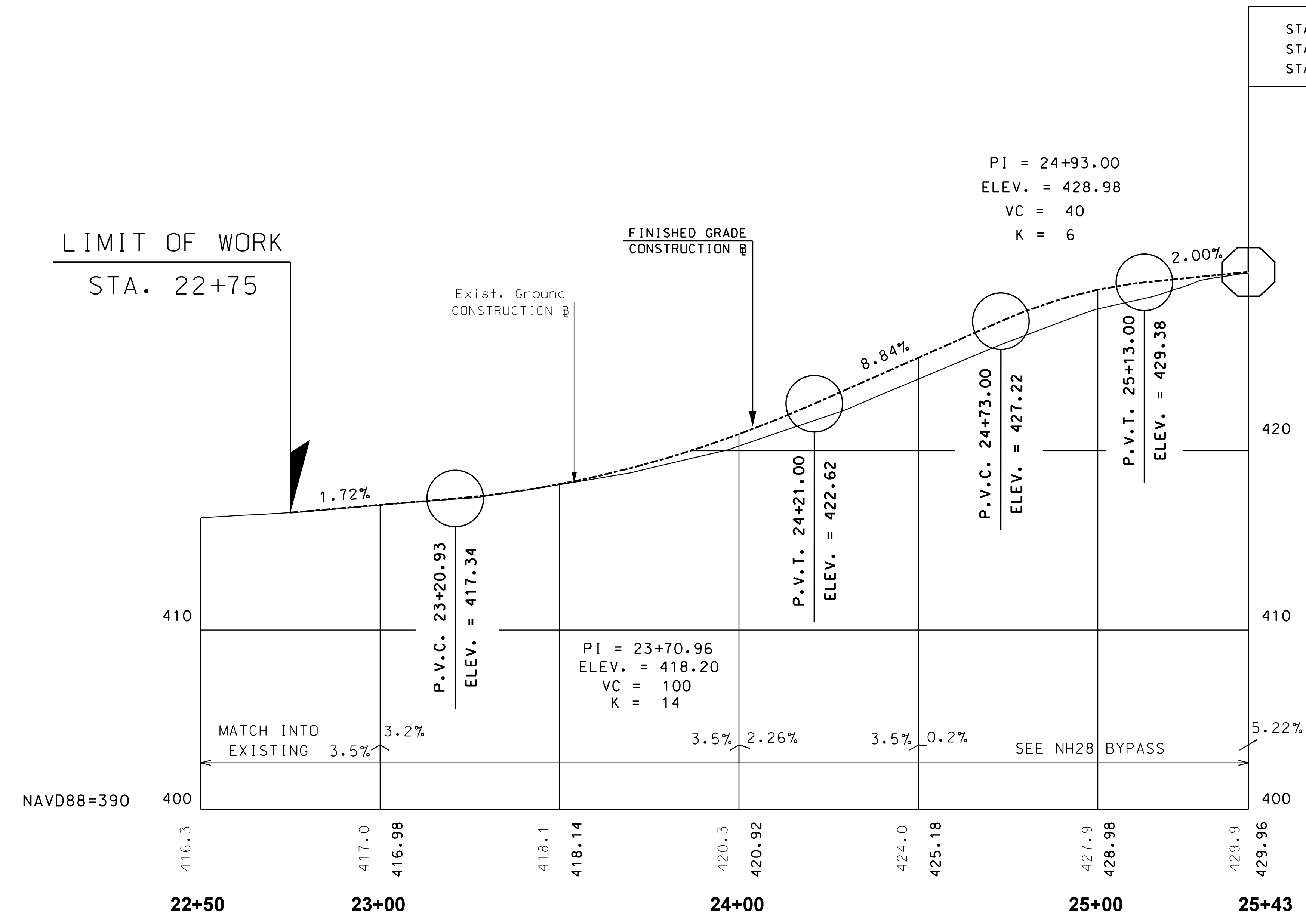
1 1/2" HOT BITUMINOUS PAVEMENT, MACHINE METHOD, HIGH STRENGTH (QC/QA TIER 2) WEARING COURSE

SCALE:
1" = 20' HORIZ.
1" = 4' VERT.

STATE OF NEW HAMPSHIRE			
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN			
NH 28 BYPASS PROFILE			
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
24861NH28_pro	24861	25	53

SDR PROCESSED		DATE	DATE	DATE	DATE	DATE	DATE
NEW DESIGN		ENP	8/2018	8/2018			
SHEET CHECKED		TWC	8/2018				
AS BUILT DETAILS							

REVISIONS AFTER PROPOSAL	STATION	DESCRIPTION



SEE PAVEMENT
MATCH DETAIL
(SHEET 1)
FOR OVERLAY
PAVEMENT MATCH



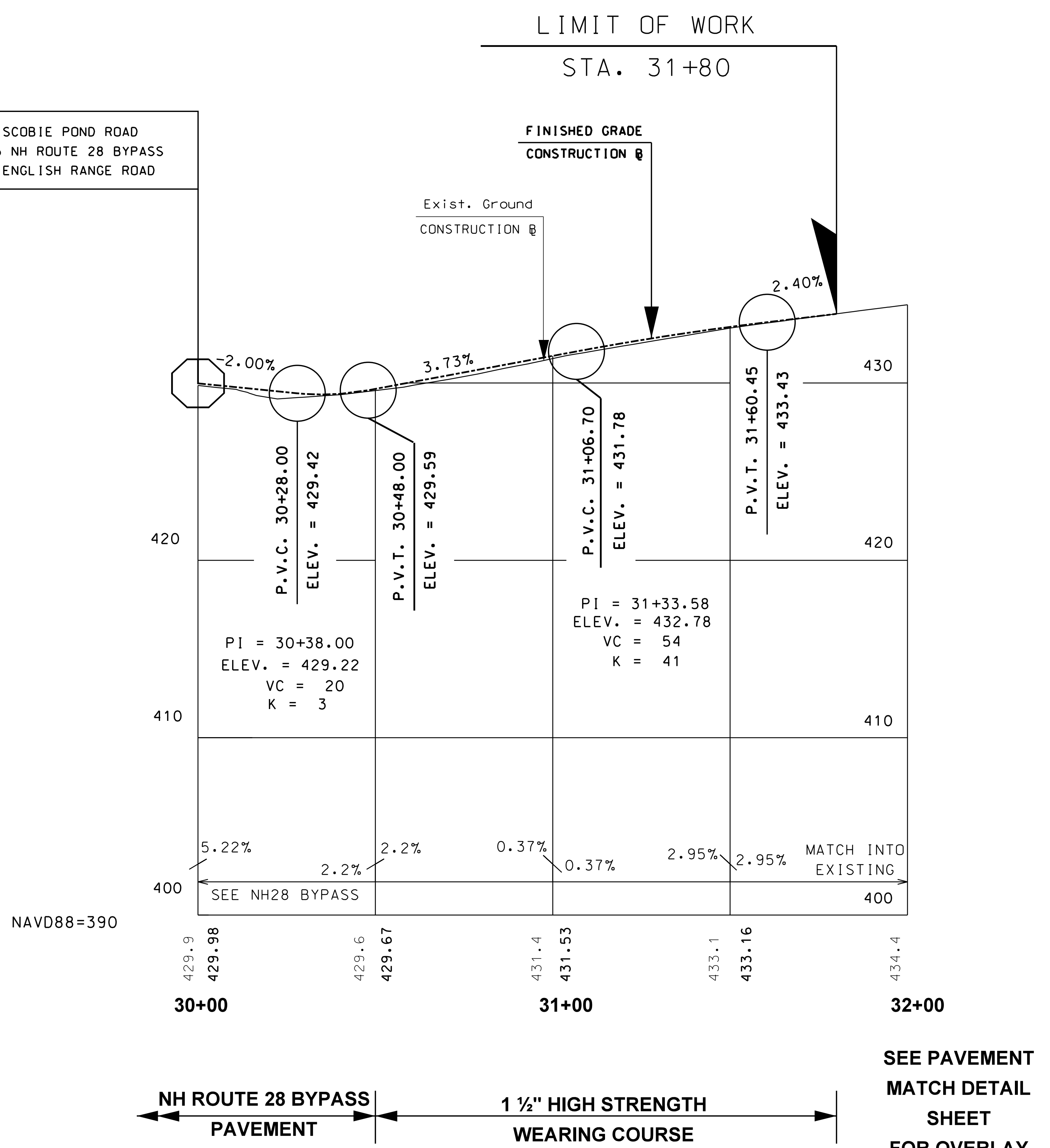
SCALE:
1" = 20' HORIZ.
1" = 4' VERT.

STATE OF NEW HAMPSHIRE			
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN			
ENGLISH RANGE ROAD PROFILE			
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
24861Side_pro	24861	27	53

SDR PROCESSED		DATE	8/2018
NEW DESIGN		DATE	8/2018
SHEET CHECKED		DATE	8/2018
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL	STATION	DESCRIPTION

STA. 30+00 SCOBIE POND ROAD
 STA. 113+35 NH ROUTE 28 BYPASS
 STA. 25+43 ENGLISH RANGE ROAD

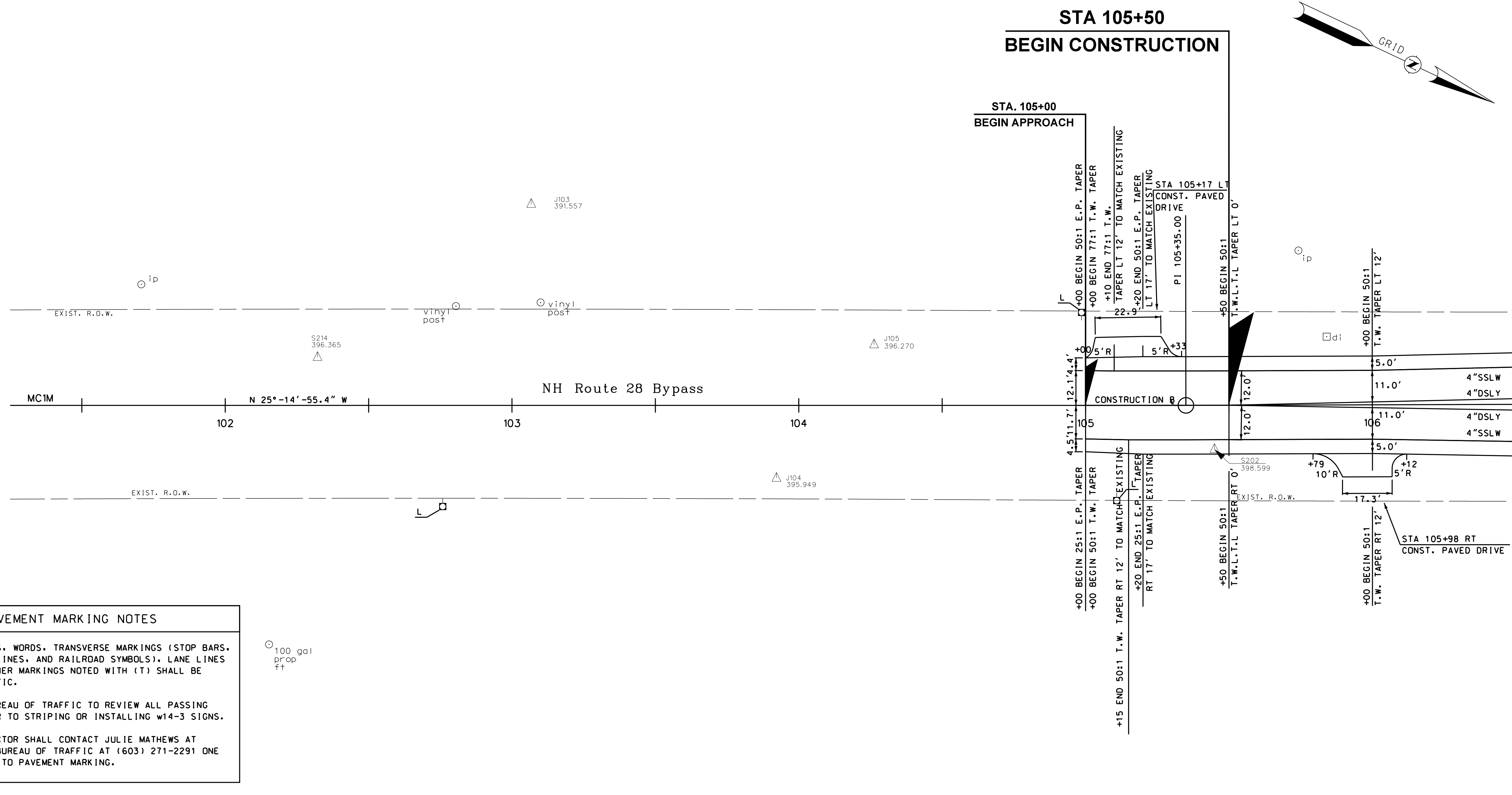


SCALE:
 1" = 20' HORIZ.
 1" = 4' VERT.

STATE OF NEW HAMPSHIRE			
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN			
SCOBIE POND ROAD PROFILE			
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
24861Side_pro	24861	28	53

SDR PROCESSED	SEL	DATE	9/2013
NEW DESIGN	ENP	DATE	8/2018
SHEET CHECKED	TWC	DATE	8/2018
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL	STATION	DESCRIPTION



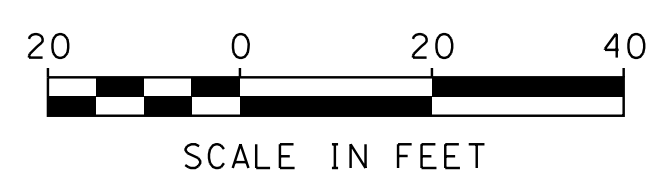
PAVEMENT MARKING NOTES

- ALL SYMBOLS, WORDS, TRANSVERSE MARKINGS (STOP BARS, CROSSWALK LINES, AND RAILROAD SYMBOLS), LANE LINES AND ALL OTHER MARKINGS NOTED WITH (T) SHALL BE THERMOPLASTIC.
- CONTACT BUREAU OF TRAFFIC TO REVIEW ALL PASSING ZONES PRIOR TO STRIPING OR INSTALLING w14-3 SIGNS.
- THE CONTRACTOR SHALL CONTACT JULIE MATHEWS AT THE NHDOT BUREAU OF TRAFFIC AT (603) 271-2291 ONE WEEK PRIOR TO PAVEMENT MARKING.

PAVEMENT MARKING LEGEND

[]SSL() = [SIZE IN INCHES] SINGLE SOLID LINE (COLOR W = WHITE, Y = YELLOW)
 []DSL() = [SIZE IN INCHES] DOUBLE SOLID LINE (COLOR W = WHITE, Y = YELLOW)
 []SSB() = [SIZE IN INCHES] SINGLE SOLID WITH BROKEN LINE (COLOR W = WHITE, Y = YELLOW)
 []SBL() = [SIZE IN INCHES] SINGLE BROKEN LINE (COLOR W = WHITE, Y = YELLOW)
 []DBL() = [SIZE IN INCHES] DOUBLE BROKEN LINE (COLOR W = WHITE, Y = YELLOW)

EXAMPLE: A 4" SINGLE SOLIDE LINE WHITE = 4"SSLW

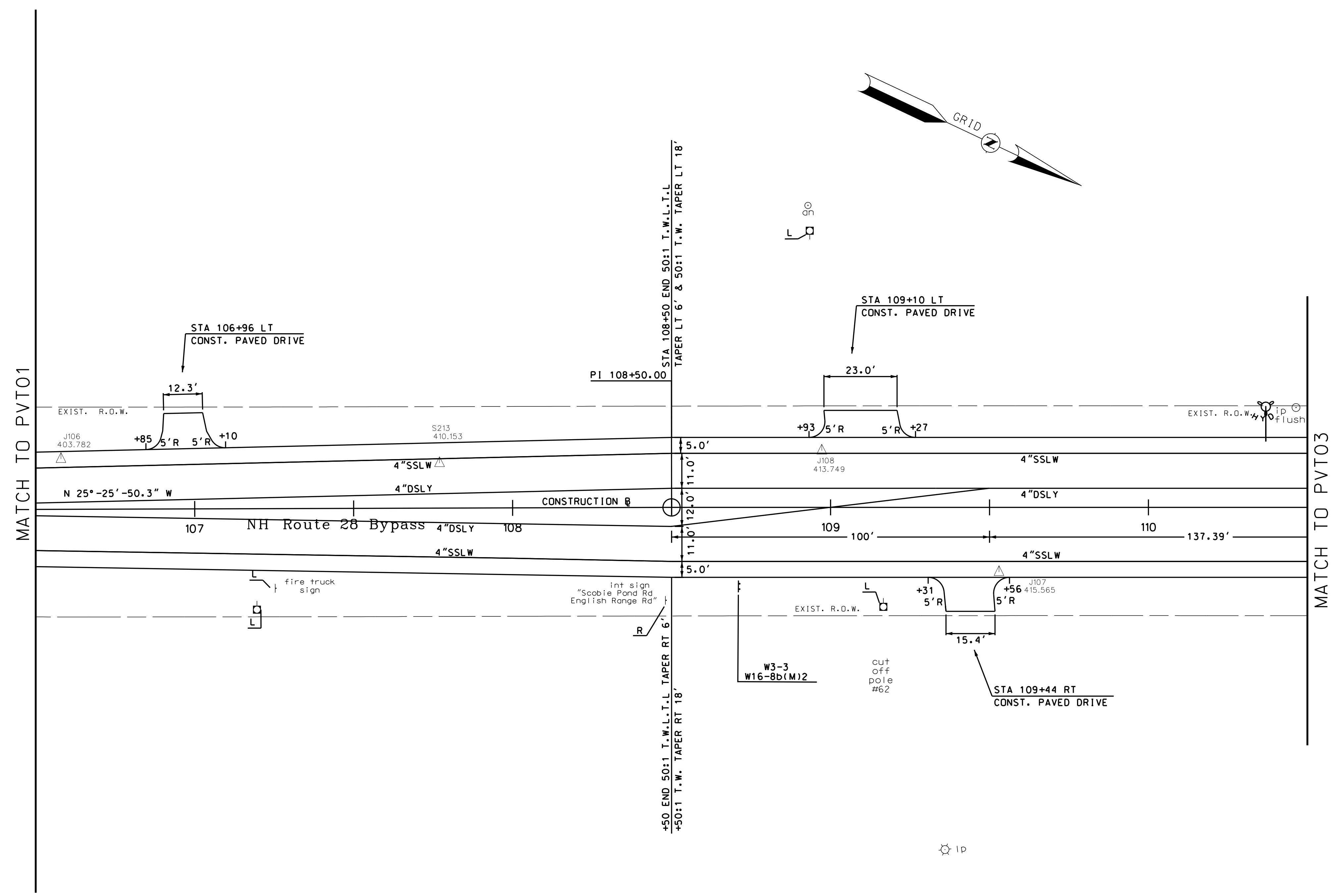


STATE OF NEW HAMPSHIRE				
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN				
CURBING, SIGNING, LIGHTING, PAVEMENT LAYOUT & MARKING PLANS (SHEET 1 OF 7)				
MODEL	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
PVT01	24861PVTPIans	24861	29	53

MATCH TO PVT02

SDR PROCESSED	SEL	DATE	9/2013
NEW DESIGN	ENP	DATE	8/2018
SHEET CHECKED	TWC	DATE	8/2018
AS BUILT DETAILS		DATE	

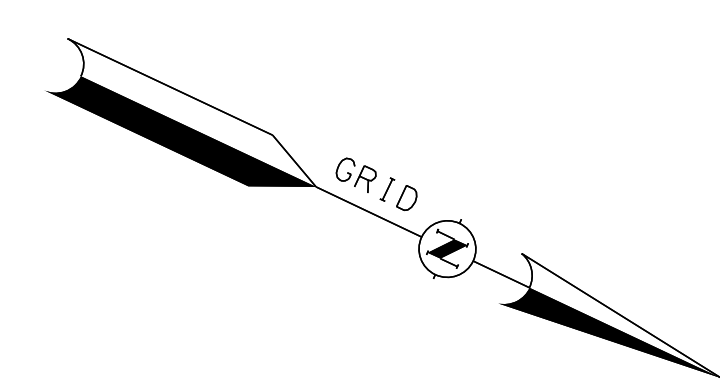
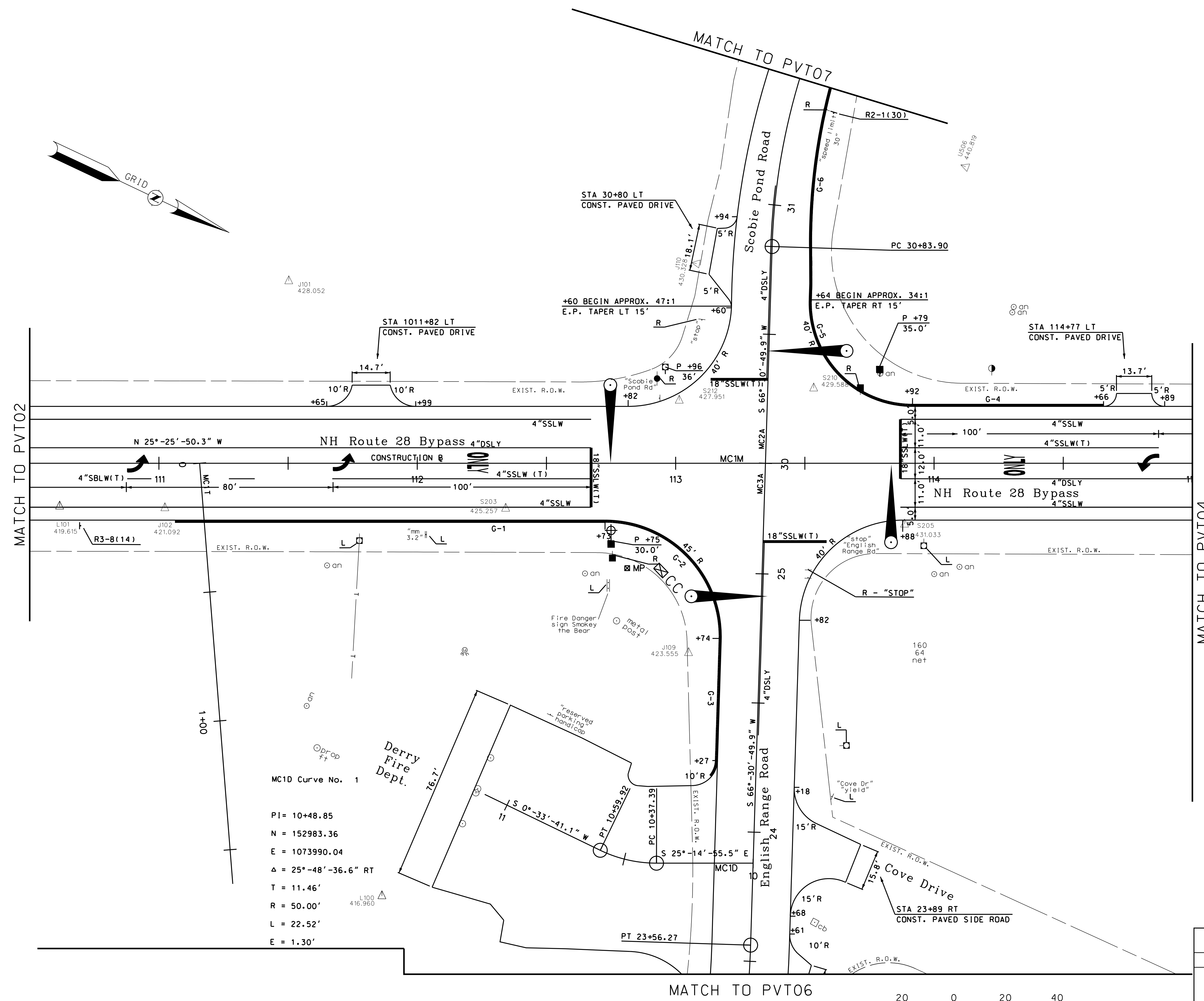
REVISIONS AFTER PROPOSAL	STATION	DESCRIPTION



STATE OF NEW HAMPSHIRE				
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN				
CURBING, SIGNING, LIGHTING, PAVEMENT LAYOUT & MARKING PLANS (SHEET 2 OF 7)				
MODEL	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
PVT02	24861PVTPPlans	24861	30	53

SDR PROCESSED	SEL	DATE	9/2013
NEW DESIGN	ENP	DATE	8/2018
SHEET CHECKED	TWC	DATE	8/2018
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL	STATION	DESCRIPTION



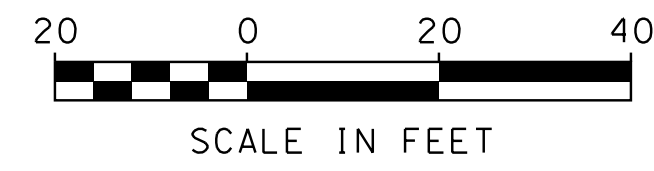
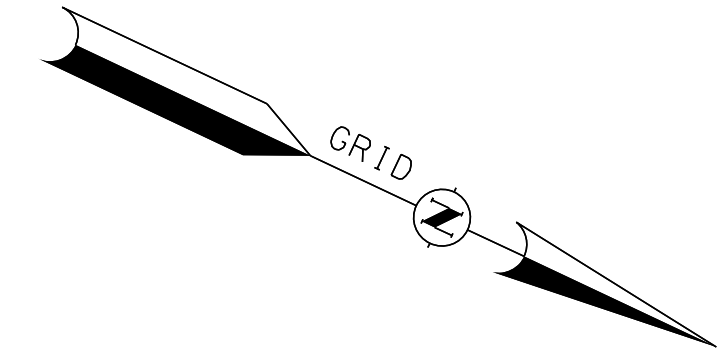
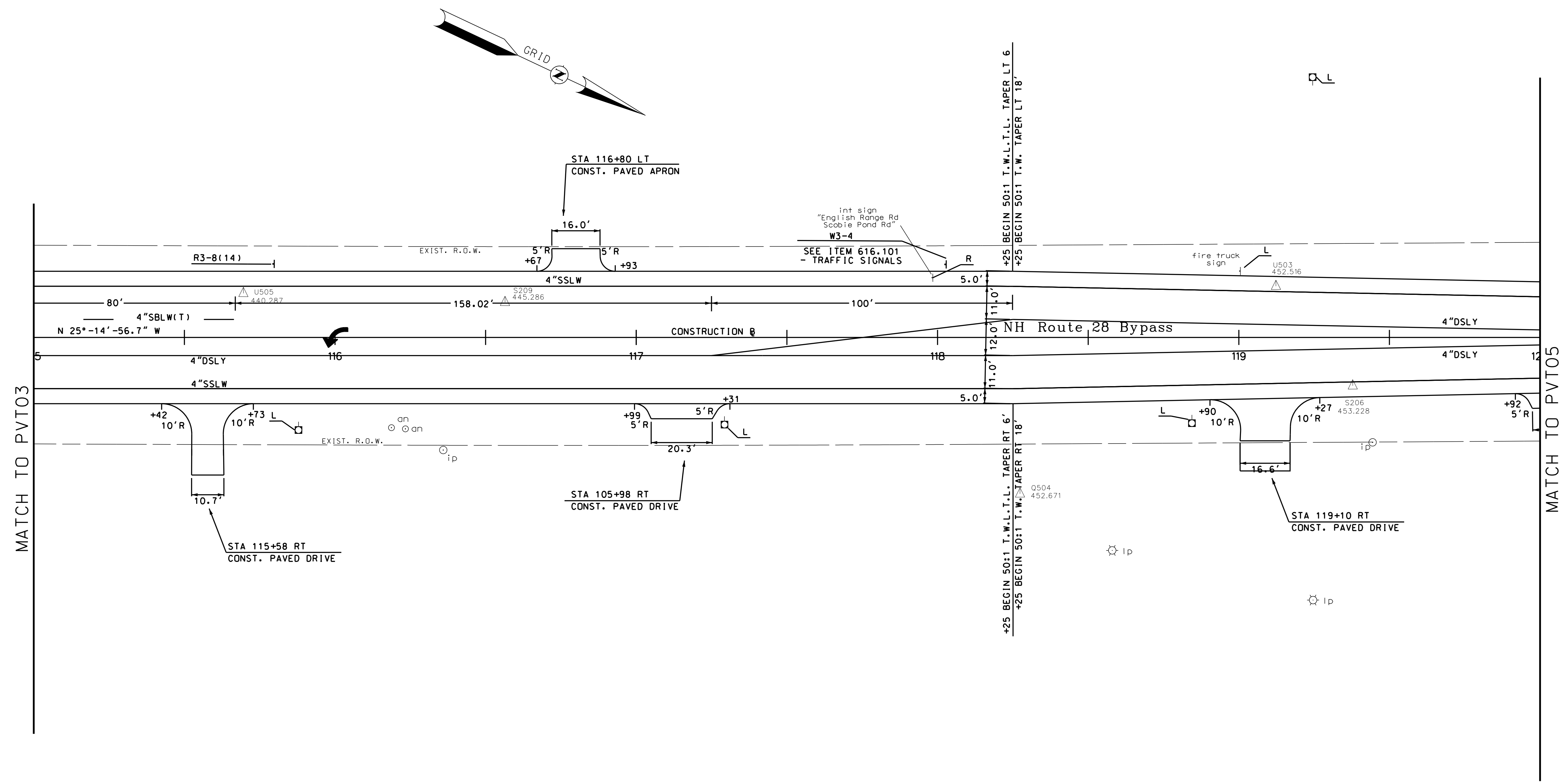
MC1D Curve No. 1
 PI = 10+48.85
 N = 152983.36
 E = 1073990.04
 Δ = 25°-48'-36.6" RT
 T = 11.46'
 R = 50.00'
 L = 22.52'
 E = 1.30'



STATE OF NEW HAMPSHIRE				
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN				
CURBING, SIGNING, LIGHTING, PAVEMENT LAYOUT & MARKING PLANS (SHEET 3 OF 7)				
MODEL	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
PVT03	24861PVTPlans	24861	31	53

SDR PROCESSED	SEL	DATE	9/2013
NEW DESIGN	ENP	DATE	8/2018
SHEET CHECKED	TWC	DATE	8/2018
AS BUILT DETAILS		DATE	

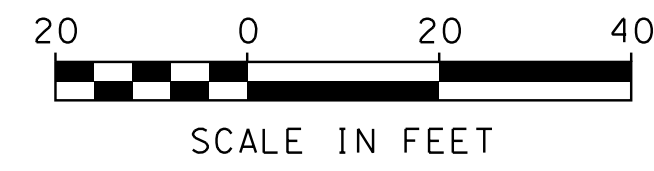
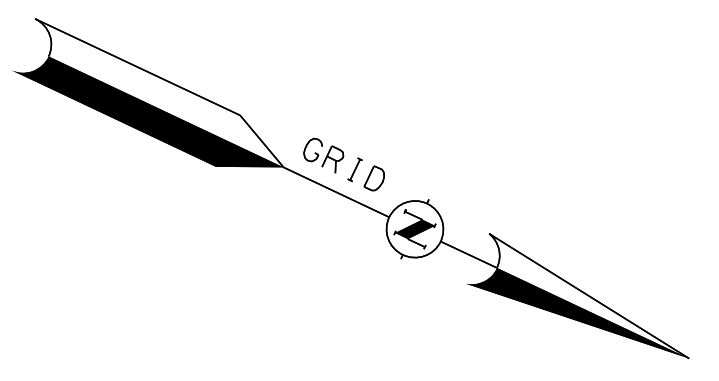
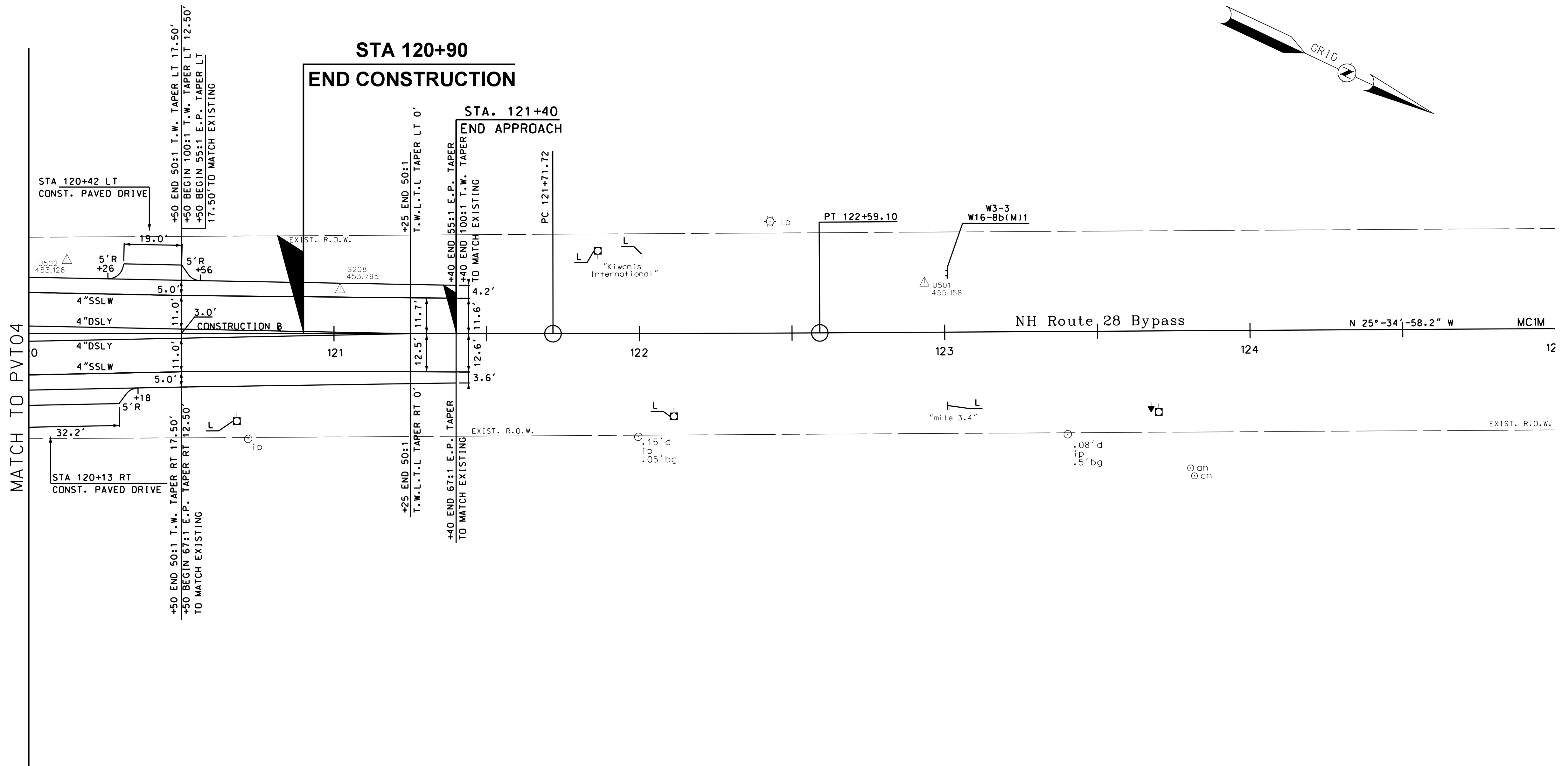
REVISIONS AFTER PROPOSAL	STATION	DESCRIPTION



STATE OF NEW HAMPSHIRE				
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN				
CURBING, SIGNING, LIGHTING, PAVEMENT LAYOUT & MARKING PLANS (SHEET 4 OF 7)				
MODEL	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
PVT04	24861PVTPPlans	24861	32	53

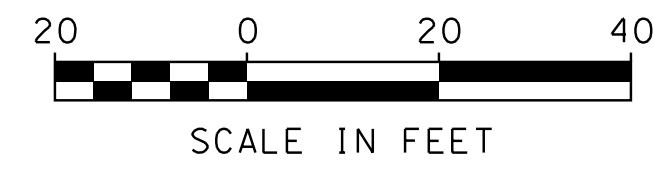
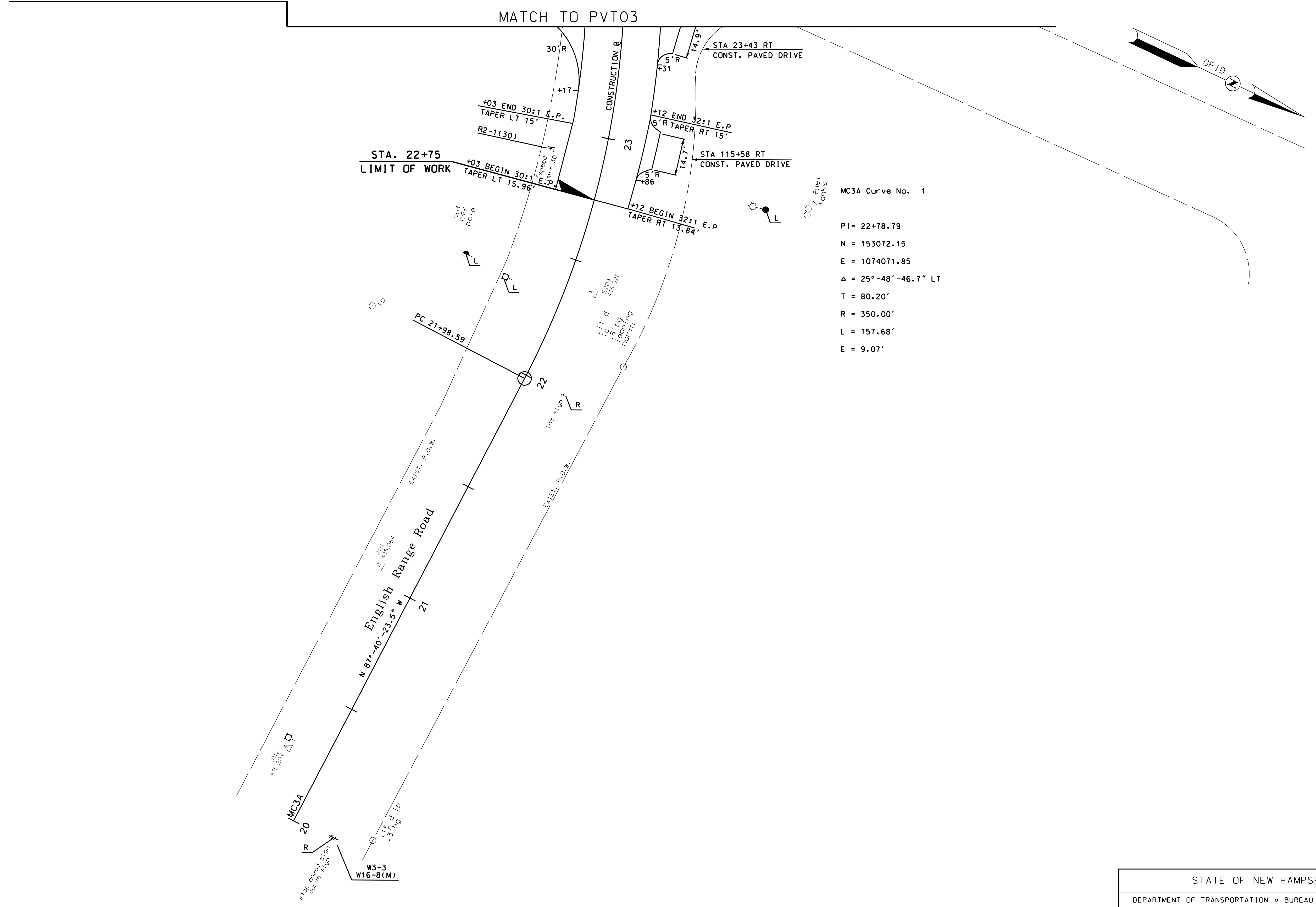
SDR PROCESSED	SEL	DATE	9/2013
NEW DESIGN	ENP	DATE	8/2018
SHEET CHECKED	TWC	DATE	8/2018
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL	STATION	DESCRIPTION



STATE OF NEW HAMPSHIRE				
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN				
CURBING, SIGNING, LIGHTING, PAVEMENT LAYOUT & MARKING PLANS (SHEET 5 OF 7)				
MODEL	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
PVT05	24861PVTPPlans	24861	33	53

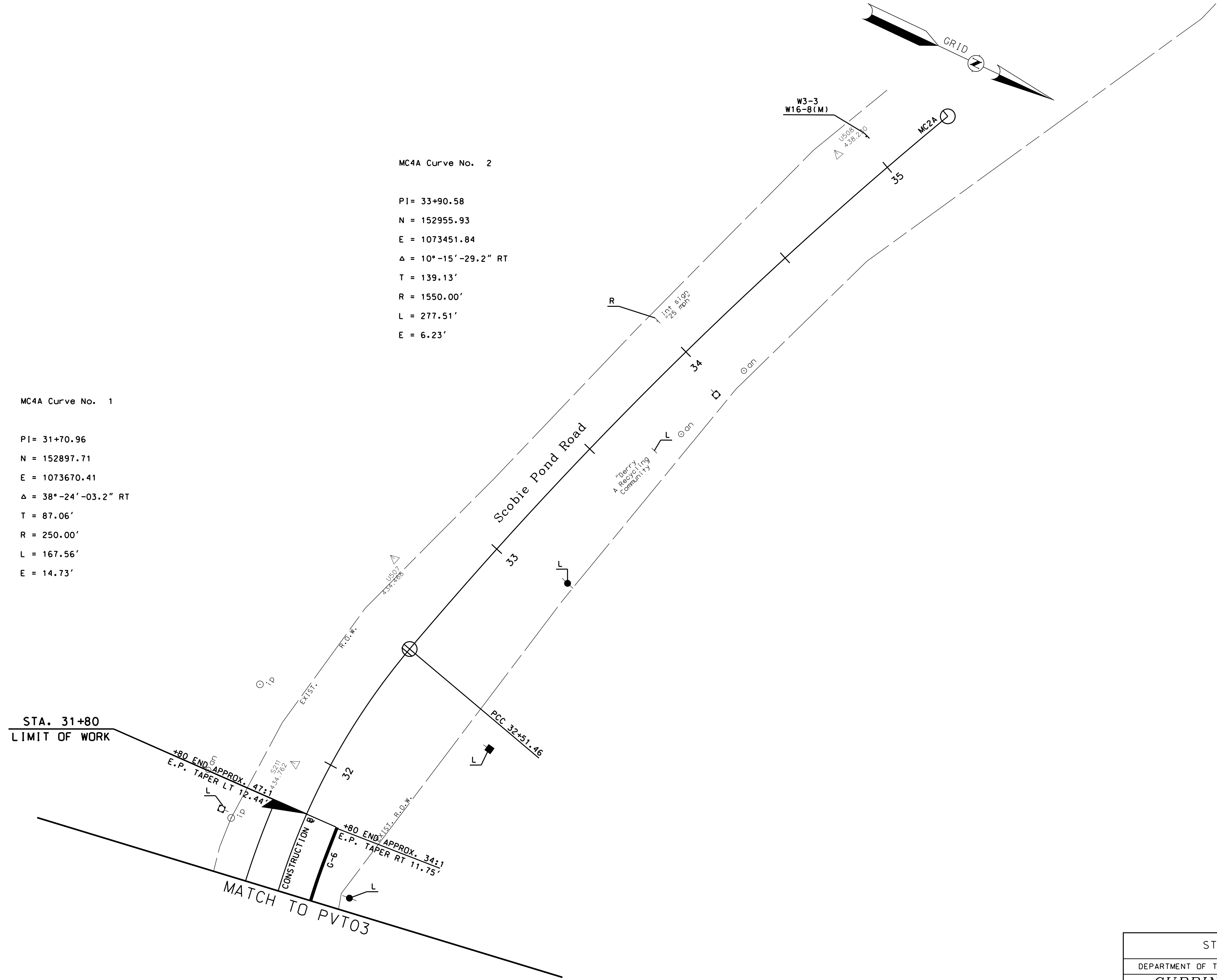
SDR PROCESSED		SEL	DATE	9/2013	REVISIONS AFTER PROPOSAL	
NEW DESIGN		ENP	DATE	8/2018	NUMBER	STATION
SHEET CHECKED		TWC	DATE	8/2018	DATE	DESCRIPTION
AS BUILT DETAILS			DATE			



STATE OF NEW HAMPSHIRE
 DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN
**CURBING, SIGNING, LIGHTING,
 PAVEMENT LAYOUT & MARKING
 PLANS (SHEET 6 OF 7)**

MODEL	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
PVT06	24861PVTPPlans	24861	34	53

SDR PROCESSED		SEL	DATE	9/2013	REVISIONS AFTER PROPOSAL	STATION	DESCRIPTION
NEW DESIGN		ENP	DATE	8/2018			
SHEET CHECKED		TWC	DATE	8/2018			
AS BUILT DETAILS			DATE				

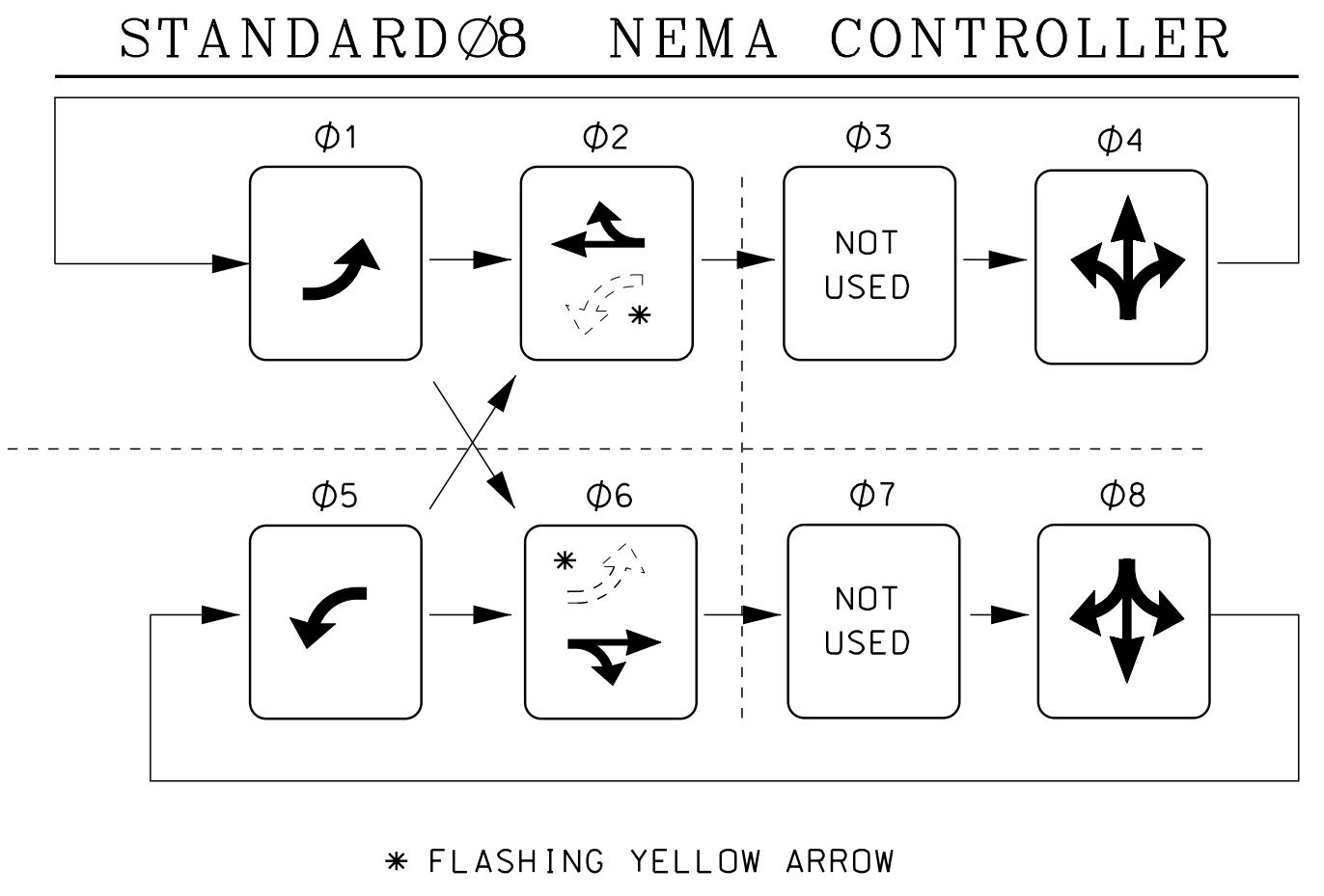


STATE OF NEW HAMPSHIRE				
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN				
CURBING, SIGNING, LIGHTING, PAVEMENT LAYOUT & MARKING PLANS (SHEET 7 OF 7)				
MODEL	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
PVT07	24861PVTPPlans	24861	35	53

SDR PROCESSED DATE 7/2018 NEW DESIGN DNB DATE 8/2018 SHEET CHECKED EMP DATE AS BUILT DETAILS

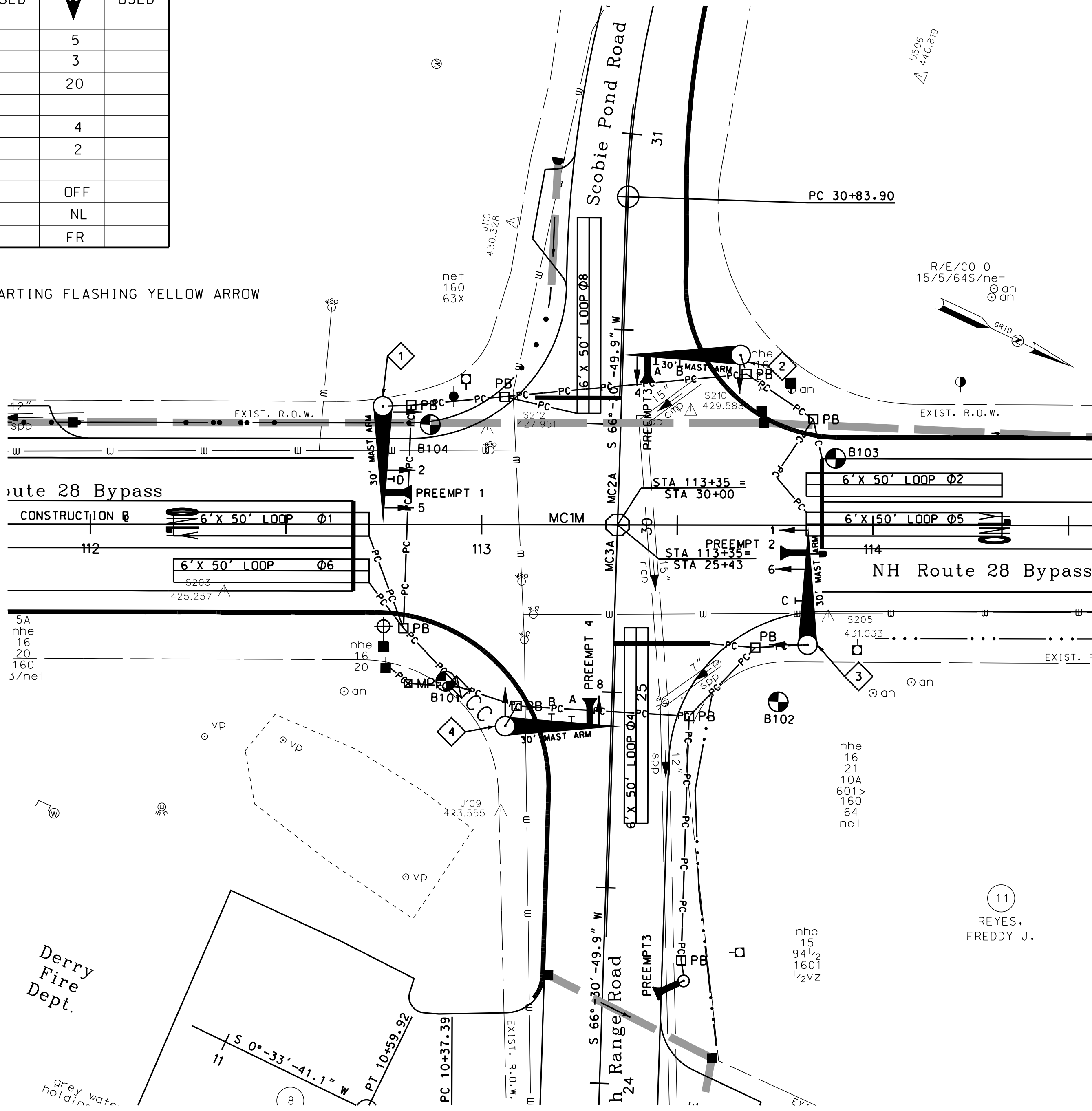
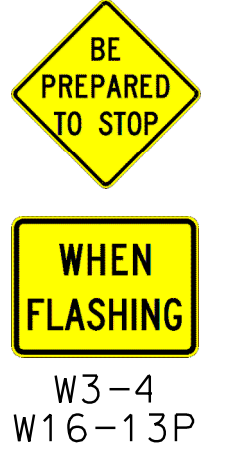
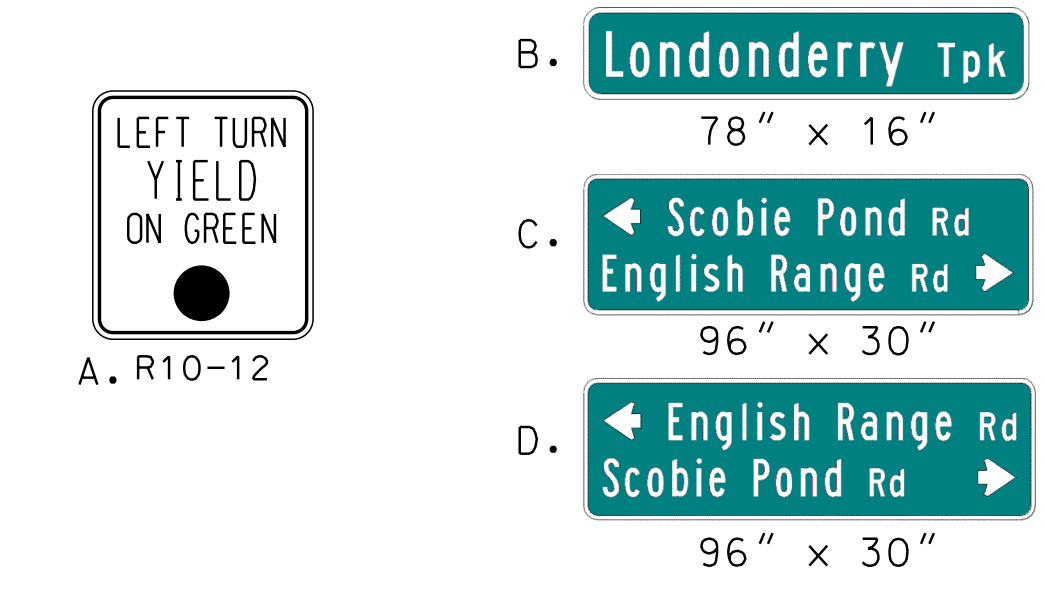
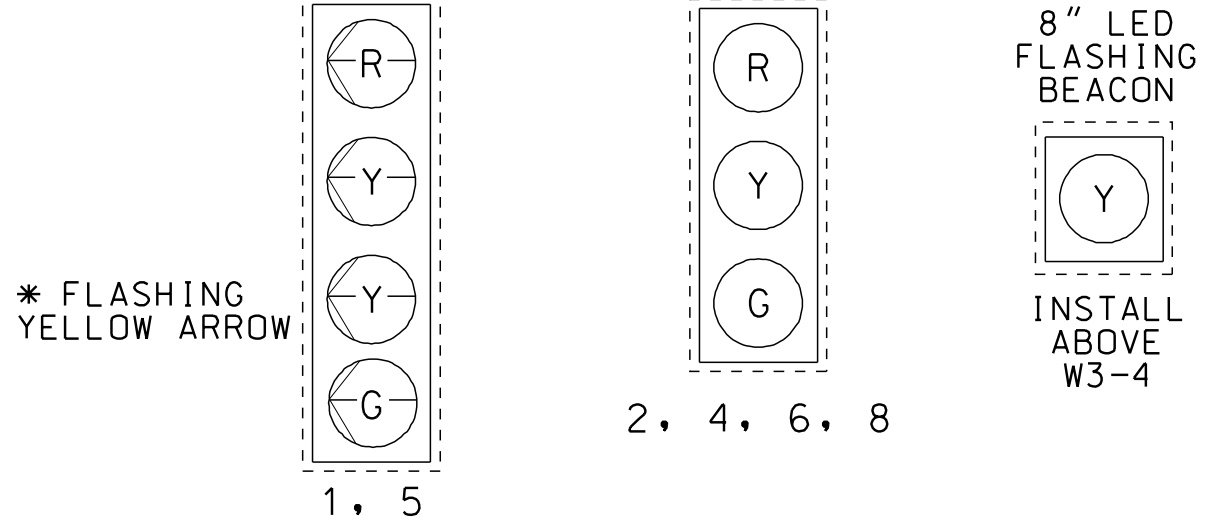
SIGNAL PHASING									
TIMING IN SECONDS	Φ1	Φ2	Φ3	Φ4	Φ5	Φ6	Φ7	Φ8	Φ9
INITIAL INTERVAL	5	8	NOT USED	5	5	8	NOT USED	5	NOT USED
VEHICLE EXTENSION	3	3	NOT USED	3	3	3	NOT USED	3	NOT USED
MAXIMUM I	10	30	NOT USED	20	10	30	NOT USED	20	NOT USED
MAXIMUM II									
YELLOW	4	4	NOT USED	4	4	4	NOT USED	4	NOT USED
ALL RED	2	2	NOT USED	2	2	2	NOT USED	2	NOT USED
WALK/FLASH DON'T WALK									
RECALL	OFF	SOFT	NOT USED	OFF	OFF	SOFT	NOT USED	OFF	NOT USED
DETECTOR	NL	NL	NOT USED	NL	NL	NL	NOT USED	NL	NOT USED
FLASH	FR	FY	NOT USED	FR	FR	FY	NOT USED	FR	NOT USED

Φ4 AND Φ8 TO BE SET WITH A 5 SECOND DELAY
 THE LEFT TURN RED CLEARANCE INTERVAL SHALL BE DISPLAYED PRIOR TO STARTING FLASHING YELLOW ARROW

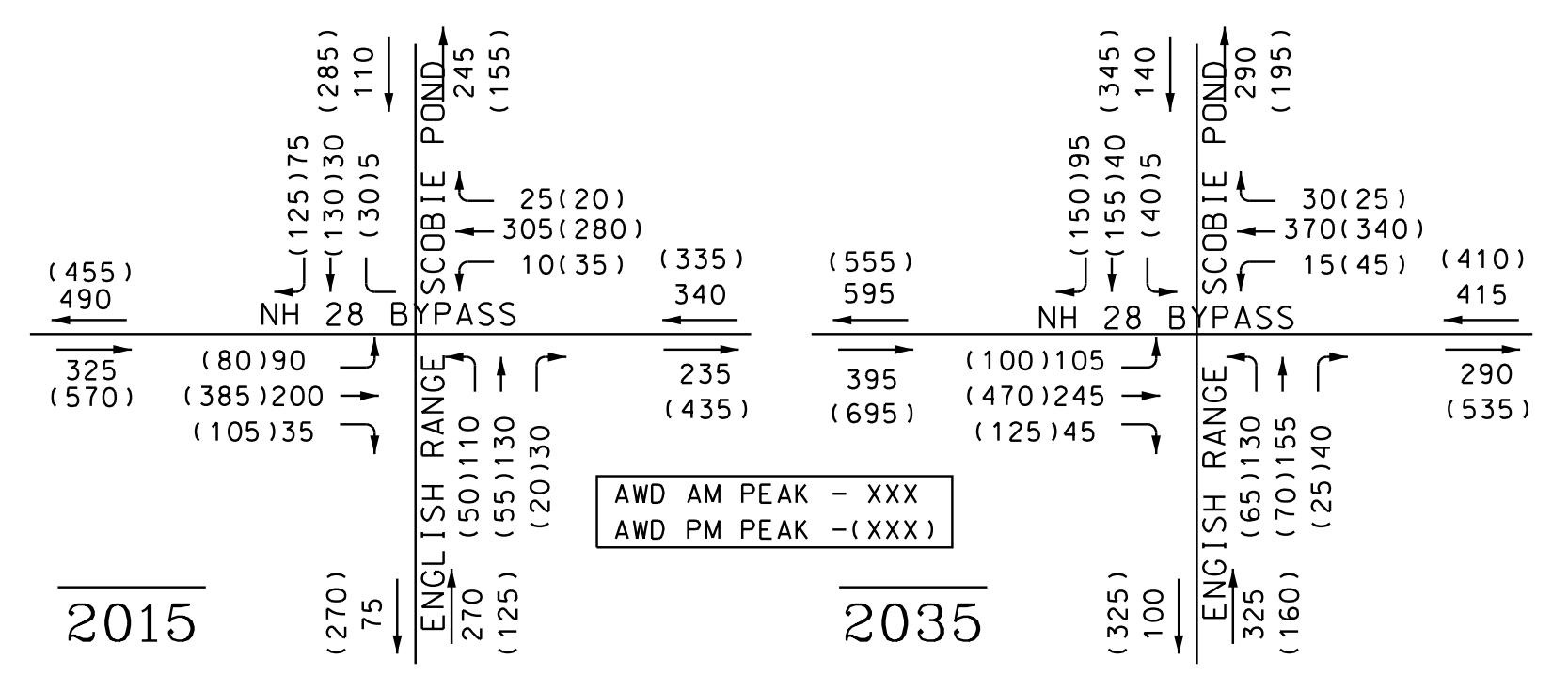


SIGNAL HEADS

ALL LENSES 12" WITH 5" LOUVERED BACK PLATE. THE OUTSIDE PERIMETER OF THE BACKPLATE SHALL BE LINED WITH A 2-INCH FLUORESCENT YELLOW STRIP OF TYPE IX OR XI REFLECTIVE SHEETING



AM & PM PEAK TRAFFIC VOLUMES



FIRE PREEMPTION

PREEMPT 1	CALLS Φ 1 & 6
PREEMPT 2	CALLS Φ 2 & 5
PREEMPT 3	CALLS Φ 8
PREEMPT 4	CALLS Φ 4

PREEMPTION NOTES:
 1. LOCATION OF EMERGENCY VEHICLE PREEMPTION RECEIVERS ARE TO BE DETERMINED IN THE FIELD BY THE CONTRACTOR, ENGINEER AND THE TOWN OF DERRY FIRE DEPARTMENT.
 2. PREEMPTION SIGNAL SHALL BE SERVED ON A FIRST COME-FIRST SERVE BASIS.
 3. MINIMUM GREEN TIME: NORMAL VEHICLE CLEARANCE TIMES SHALL BE PROVIDED ON PHASES THAT ARE TO BE DETERMINED BY PREEMPTION DEMAND.

MAST ARM FOUNDATION TYPE

REF. #	FOUNDATION TYPE
1	TYPE 2 CIRCULAR SHAFT
2	TYPE 2 CIRCULAR SHAFT & ROCK SOCKET
3	TYPE 2 CIRCULAR SHAFT
4	TYPE 2 CIRCULAR SHAFT

TEST BORINGS

B-101	112+91 RT 40.02'
B-102	113+76 RT 45.17'
B-103	113+90 LT 17.09'
B-104	112+87 LT 25.55'

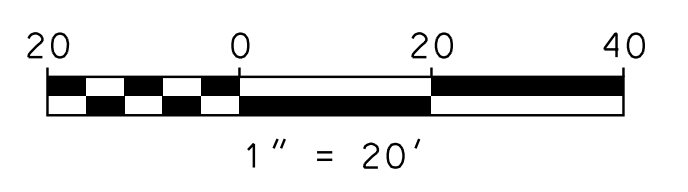
DETECTOR SCHEDULE

STREET	DIRECTION	LANE	AMPLIFIER			INDUCT. UH	RESIST. OF LOOP	RESIST. LOOP TO GROUND (MEG OHMS)	RESIST. SHIELD TO GROUND (MEG OHMS)
			Φ	NO.	CHANNEL				
NH RTE 28 BYPASS	NORTH	LEFT	1	1	1				
NH RTE 28 BYPASS	NORTH	THRU/RT	6	1	2				
NH RTE 28 BYPASS	SOUTH	LEFT	5	2	1				
NH RTE 28 BYPASS	SOUTH	THRU/RT	2	2	2				
SCOBIE POND RD	EAST	LT/THRU/RT	8	3	1				
ENGLISH RANGE RD	WEST	LT/THUR/RT	4	4	1				

RECORD FIELD MEASUREMENTS ABOVE

GENERAL NOTES

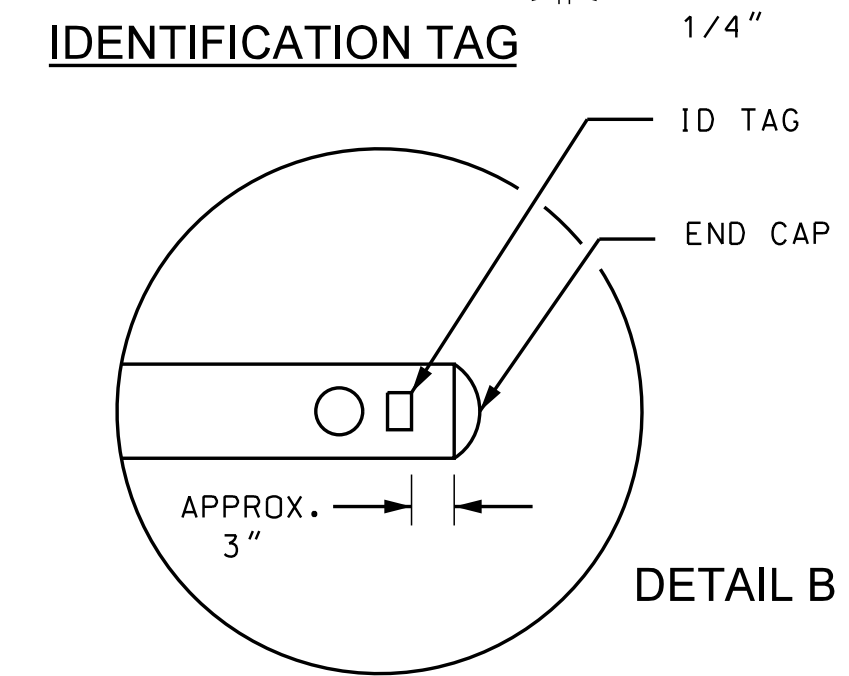
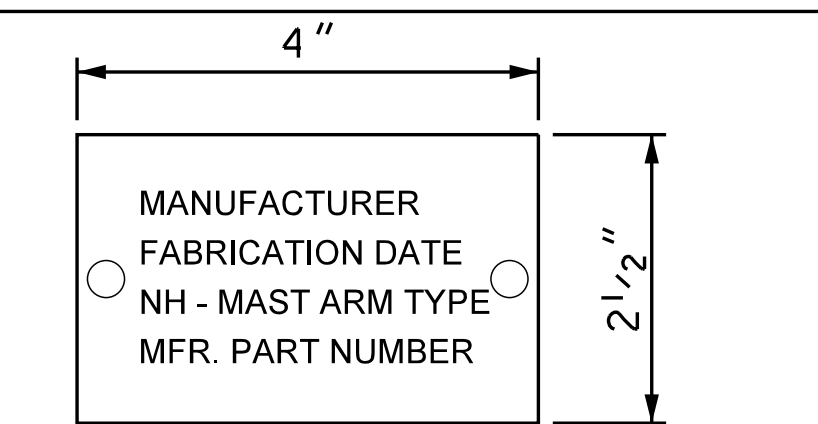
- PAVEMENT SAWING FOR LOOP DETECTORS, CONDUIT (WHEN REQUIRED), AND JACKING PITS (WHEN REQUIRED) SHALL BE SUBSIDIARY TO 616. ITEMS. REPLACEMENT OF PAVEMENT FOR CONDUIT TRENCHES AND JACKING PITS WILL BE PAID UNDER ITEM 403.12 OR 403.99.
- MAST ARMS SHALL BE ORIENTED PERPENDICULAR TO ROADWAY ALIGNMENTS UNLESS OTHERWISE NOTED.
- R10-12 SIGNS SHALL BE INSTALLED ADJACENT TO SIGNAL HEAD 488. PAYMENT IS INCLUDED UNDER ITEM 616.101
- SEE SPECIAL PROVISION 616.101 FOR STRUT NAME SIGN PLACEMENT. PAYMENT IS INCLUDED UNDER ITEM 616.101
- LOOP WIRE SHALL BE BROUGHT BACK TO THE CABINET ON SEPARATE LEAD-IN CABLES.



STATE OF NEW HAMPSHIRE
 DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

SIGNALIZATION PLAN
 NH 28 BYPASS & ENGLISH RANGE/SCOBIE POND

MODEL	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
SIG01	24861SignalPlans	24861	36	53

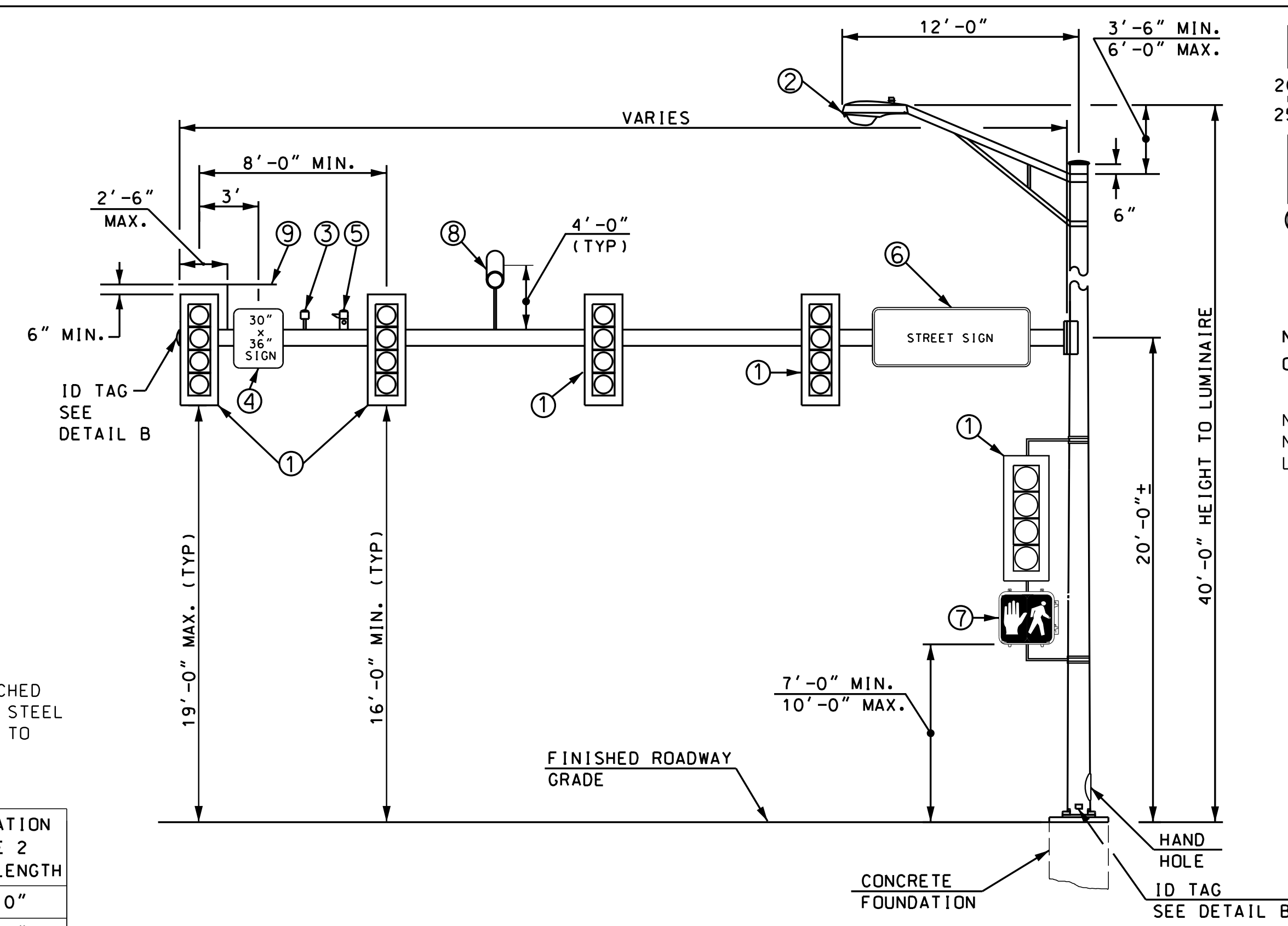


ID TAG NOTE:
TAG SHALL BE ALUMINUM OR STAINLESS STEEL AND ATTACHED TO POLE OR MAST ARM USING TWO RIVETS OR STAINLESS STEEL DRIVE SCREWS. ID TAG HOLES SHALL BE DRILLED PRIOR TO GALVANIZING.

NH MAST ARM TYPE	DIMENSION (FT)	FOUNDATION TYPE 1	FOUNDATION TYPE 2 SHAFT LENGTH
NH-20	20	1A	8' - 0"
NH-20L	20	1A	9' - 0"
NH-25	25	1A	9' - 0"
NH-25L	25	1A	10' - 0"
NH-30	30	1B	10' - 0"
NH-30L	30	1C	10' - 0"
NH-35	35	1B	10' - 0"
NH-35L	35	1C	10' - 0"
NH-40	40	1B	10' - 0"
NH-40L	40	1C	11' - 0"
NH-45	45	1C	11' - 0"
NH-45L	45	1C	11' - 0"
NH-50	50	1D	11' - 0"
NH-50L	50	1D	11' - 0"
NH-55	55	1D	11' - 0"
NH-55L	55	1D	12' - 0"
NH-60	60	1E	12' - 0"
NH-60L	60	1E	12' - 0"

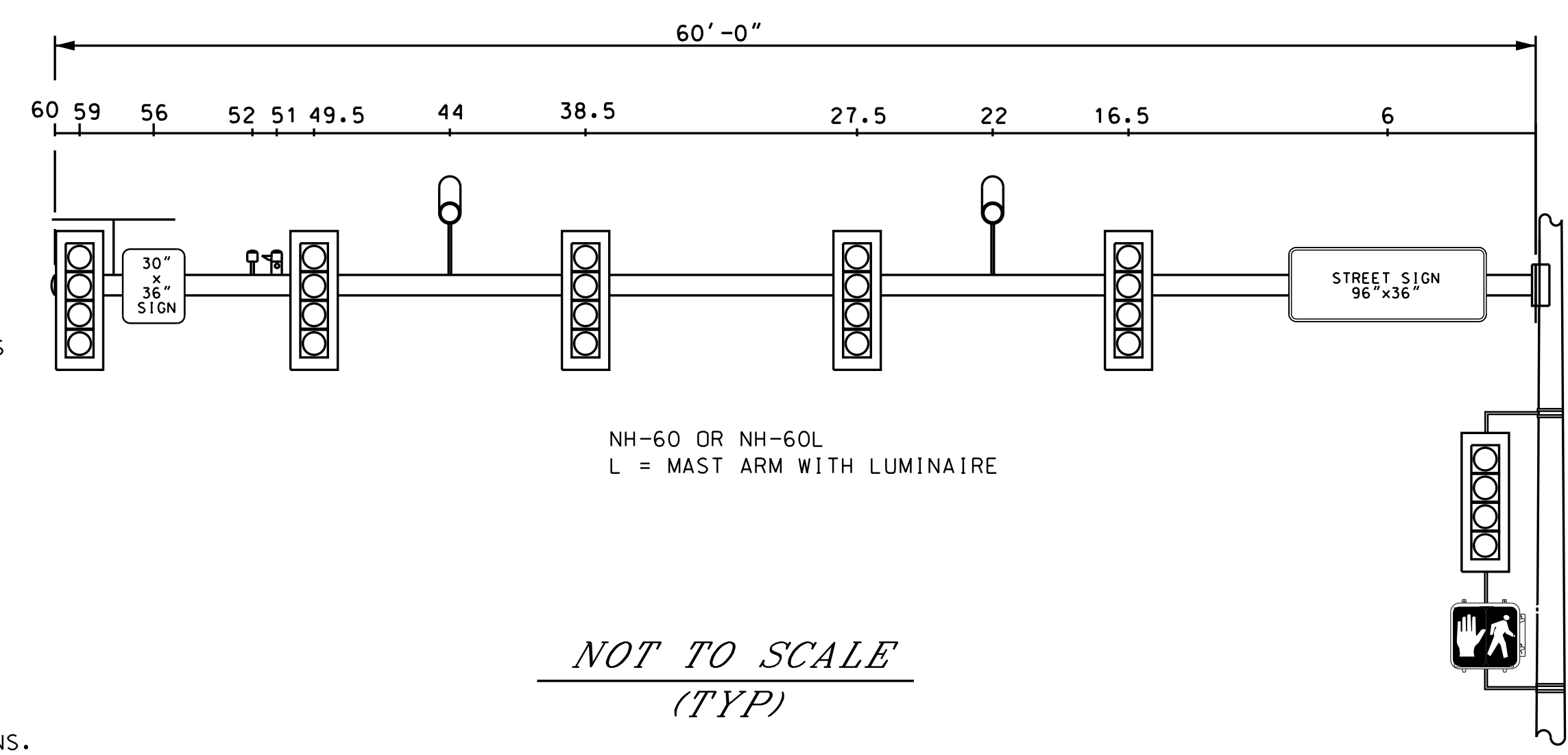
GENERAL NOTES

- NOTES FOR TRAFFIC SIGNAL POLES, MAST ARMS AND PEDESTALS
- TRAFFIC SIGNAL STRUCTURES SHALL BE DESIGNED IN ACCORDANCE WITH THE CURRENT EDITION OF THE AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS INCLUDING ALL INTERIMS EXCEPT AS MODIFIED HEREIN. TRAFFIC SIGNAL STRUCTURES SHALL BE DESIGNED TO SUPPORT FIXED SIGNALS, VIDEO DETECTION EQUIPMENT, EMERGENCY PREEMPTION EQUIPMENT AND LUMINAIRES AS SHOWN ON THE PLANS. MINIMUM CLEARANCE TO THE BOTTOM OF THE OVERHEAD SIGNAL HOUSING SHALL BE 16.0 FT. TRAFFIC SIGNAL STRUCTURES SHALL BE DESIGNED BASED ON THE SPECIAL PROVISION FOR SECTION 616.
 - STEEL STRUCTURES, UNLESS OTHERWISE INDICATED, SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM A 123.
 - CONCRETE FOUNDATIONS SHALL BE CONCRETE CLASS AAA OR B, AS INDICATED ON THE FOUNDATION PLANS MEETING THE REQUIREMENTS OF 520. REINFORCING STEEL SHALL MEET THE REQUIREMENTS OF 544. THE FOUNDATIONS SHALL BE AS SHOWN ON THE PLAN.
 - ANCHOR BOLTS SHALL CONFORM TO ASTM F1554, GRADE 55, HAVING MINIMUM YIELD STRENGTH OF 55 KSI WITH THREADED END AND HEX NUTS (2 PER BOLT), FULLY GALVANIZED IN ACCORDANCE WITH ASTM A 153. ANCHOR BOLTS SHALL BE SET ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
 - MAST ARM SIGNS SHALL BE INSTALLED ON THE MAST ARM ONE HALF THE SIGN WIDTH DISTANCE PLUS TWO FEET.
 - A MITIGATION DEVICE SHALL BE INSTALLED ON ALL MAST ARM LENGTHS GREATER THAN 50 FEET.
 - LAYOUTS SHOWN ARE FOR THE DESIGN OF TRAFFIC SIGNAL STRUCTURES. IF ACTUAL LOADING IS EQUAL TO OR LESS THAN THE LAYOUTS SHOWN, A STANDARD FOUNDATION MAY BE USED. IF LOADING EXCEEDS THE STANDARD DESIGNS SHOWN, A CUSTOM FOUNDATION WILL NEED TO BE DESIGNED AND APPROVED.
 - SEE SPECIAL DETAILS FOR TYPE 1A, TYPE 1B & 1C, TYPE 1D & 1E, AND TYPE 2 MAST ARM FOUNDATIONS.

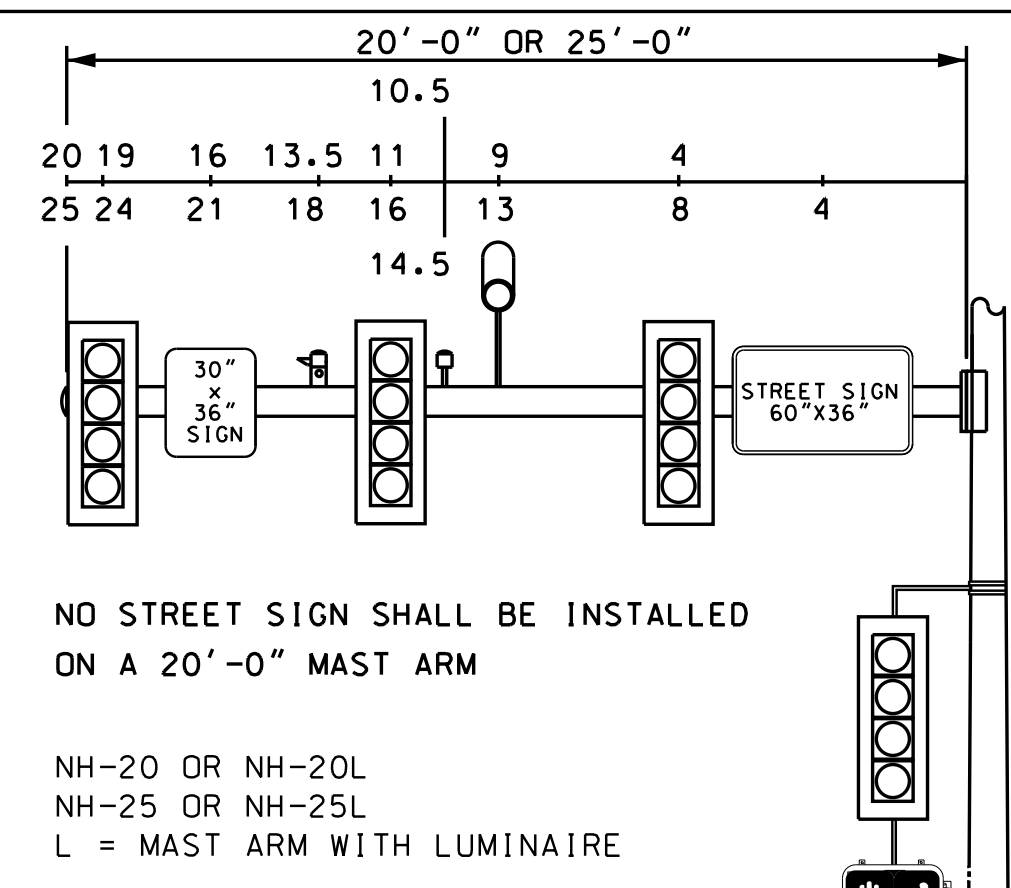


ITEM NO.	DESCRIPTION	WEIGHT (LBS.)	AREA (SQ. FT.)	SURFACE AREA (SQ. FT.)
①	4-SECTION HEAD	90	11.0	40.0
②	250 WATT LIMINAIRE	30	3.3	3.5
③	STROBE	5	1.0	N/A
④	SIGN	3.0 LB/SF	5.0	N/A
⑤	PREEMPTION RECEIVER	5	1.0	N/A
⑥	SIGN	AS	SHOWN	VARIES
⑦	PEDESTRIAN SIGNAL	80	8.0	N/A
⑧	VIDEO DETECTION	40	3.0	VARIES
⑨	MITIGATION DEVICE 60"x16"x1/8"	3.5 LB/SF		

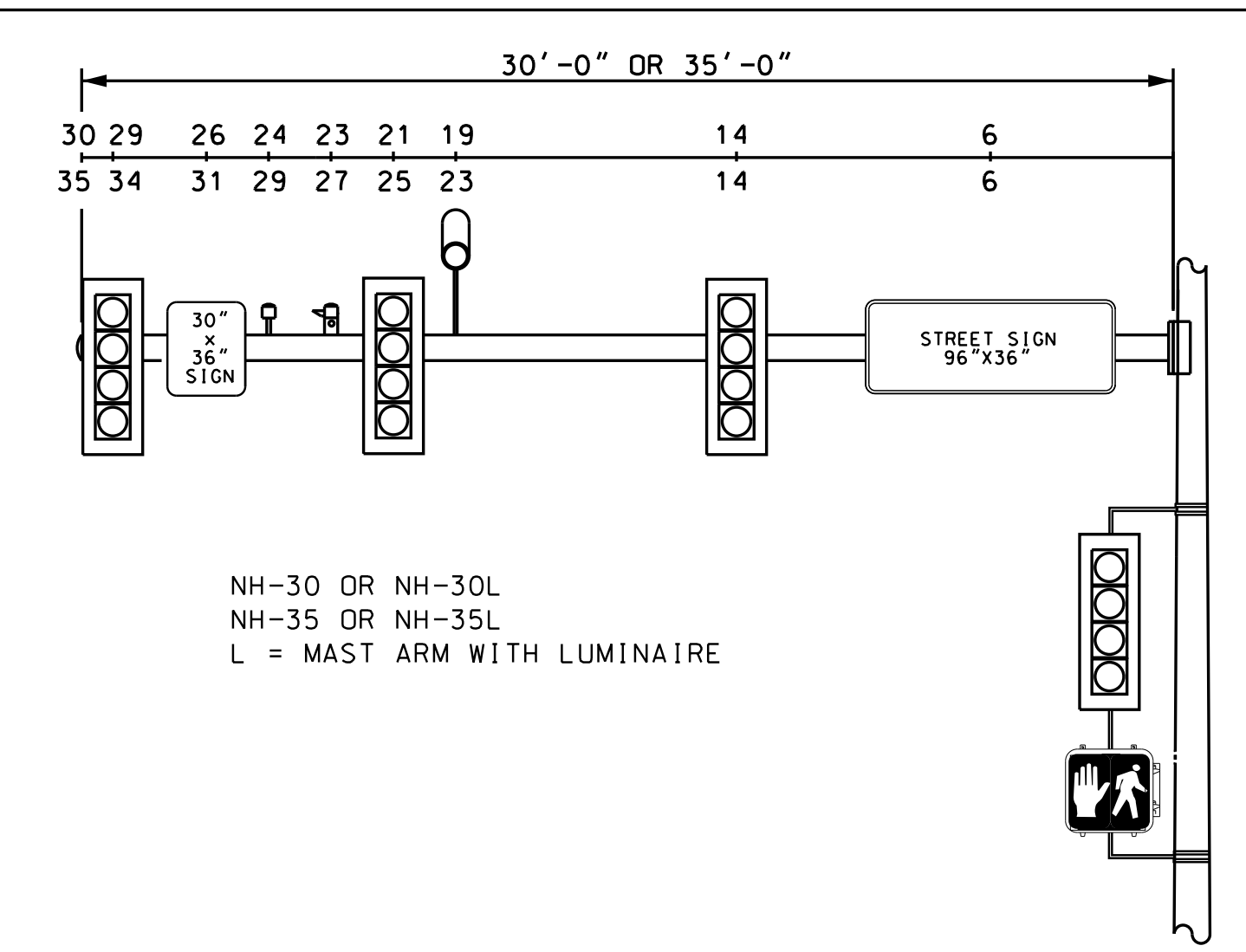
THE LOCATION OF THE STROBE AND PREEMPTION RECEIVER VARY.



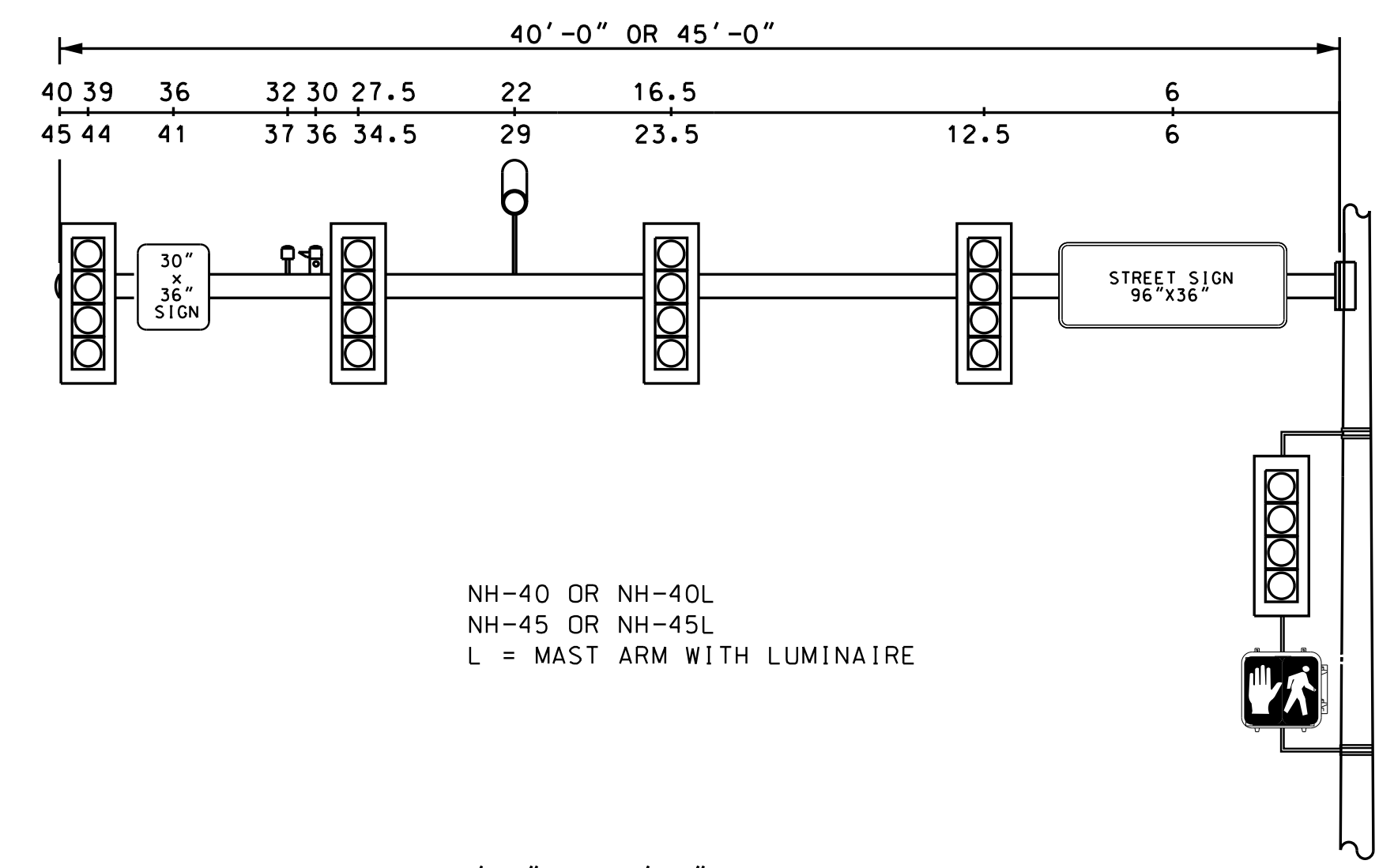
NOT TO SCALE (TYP)



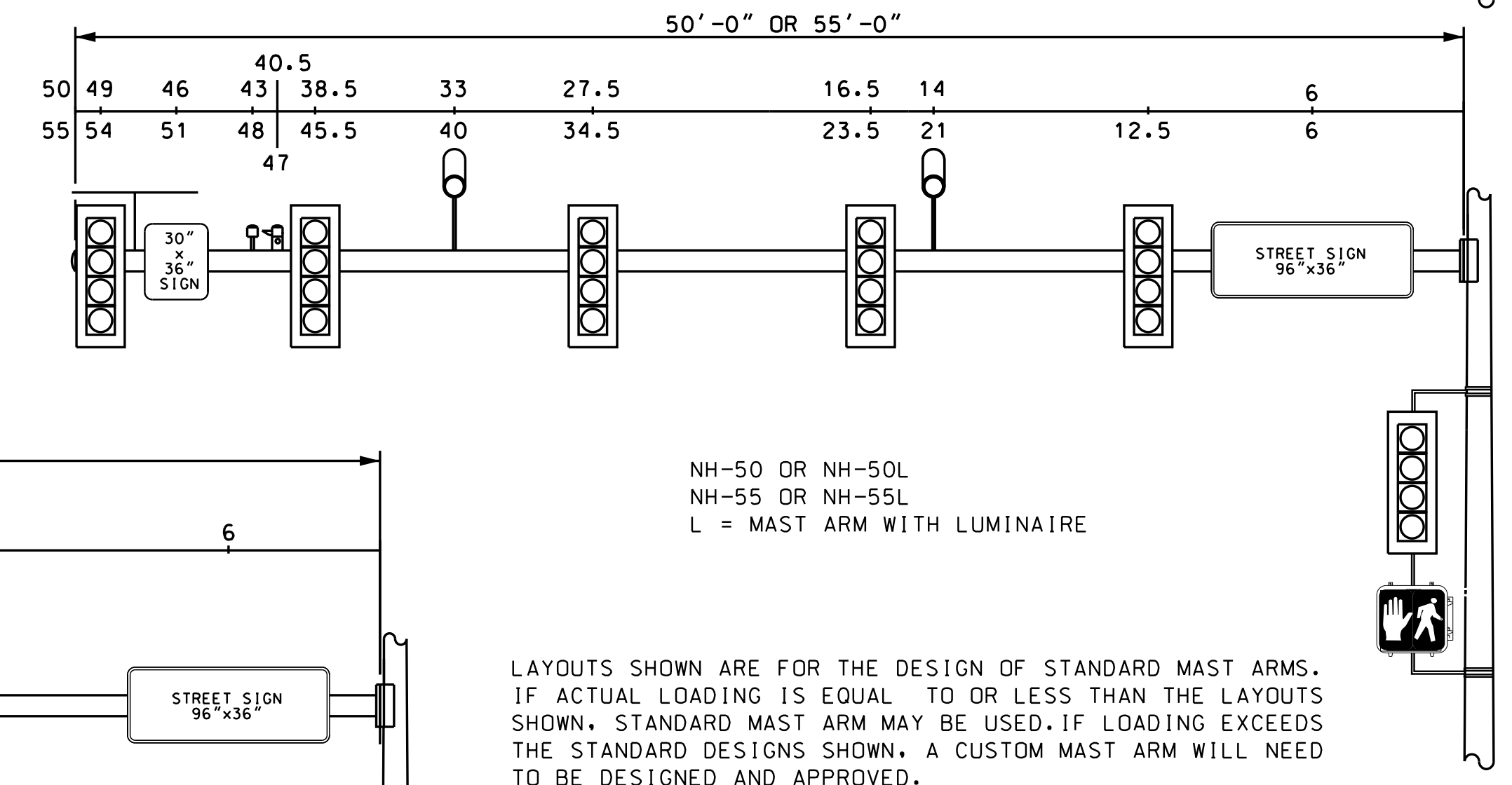
NO STREET SIGN SHALL BE INSTALLED ON A 20'-0" MAST ARM
NH-20 OR NH-20L
NH-25 OR NH-25L
L = MAST ARM WITH LUMINAIRE



NH-30 OR NH-30L
NH-35 OR NH-35L
L = MAST ARM WITH LUMINAIRE



NH-40 OR NH-40L
NH-45 OR NH-45L
L = MAST ARM WITH LUMINAIRE



NH-50 OR NH-50L
NH-55 OR NH-55L
L = MAST ARM WITH LUMINAIRE

LAYOUTS SHOWN ARE FOR THE DESIGN OF STANDARD MAST ARMS. IF ACTUAL LOADING IS EQUAL TO OR LESS THAN THE LAYOUTS SHOWN, STANDARD MAST ARM MAY BE USED. IF LOADING EXCEEDS THE STANDARD DESIGNS SHOWN, A CUSTOM MAST ARM WILL NEED TO BE DESIGNED AND APPROVED.

STATE OF NEW HAMPSHIRE				
DEPARTMENT OF TRANSPORTATION • BUREAU OF TRAFFIC				
TRAFFIC SIGNAL MAST ARM LAYOUT				
REVISION DATE	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
05-06-16	24861_ma_layout	24861	37	53

SDR PROCESSED	DATE	01/15/2016
NEW DESIGN	KFD	DATE
SHEET CHECKED	NAME3	DATE
AS BUILT DETAILS	DATE	

REVISIONS AFTER PROPOSAL	DESCRIPTION
STATION	
STATION	
DATE	
NUMBER	

TRAFFIC SIGNAL MAST ARM FOUNDATION - TYPE 2

GENERAL NOTES (TYPE 2 FOUNDATION)

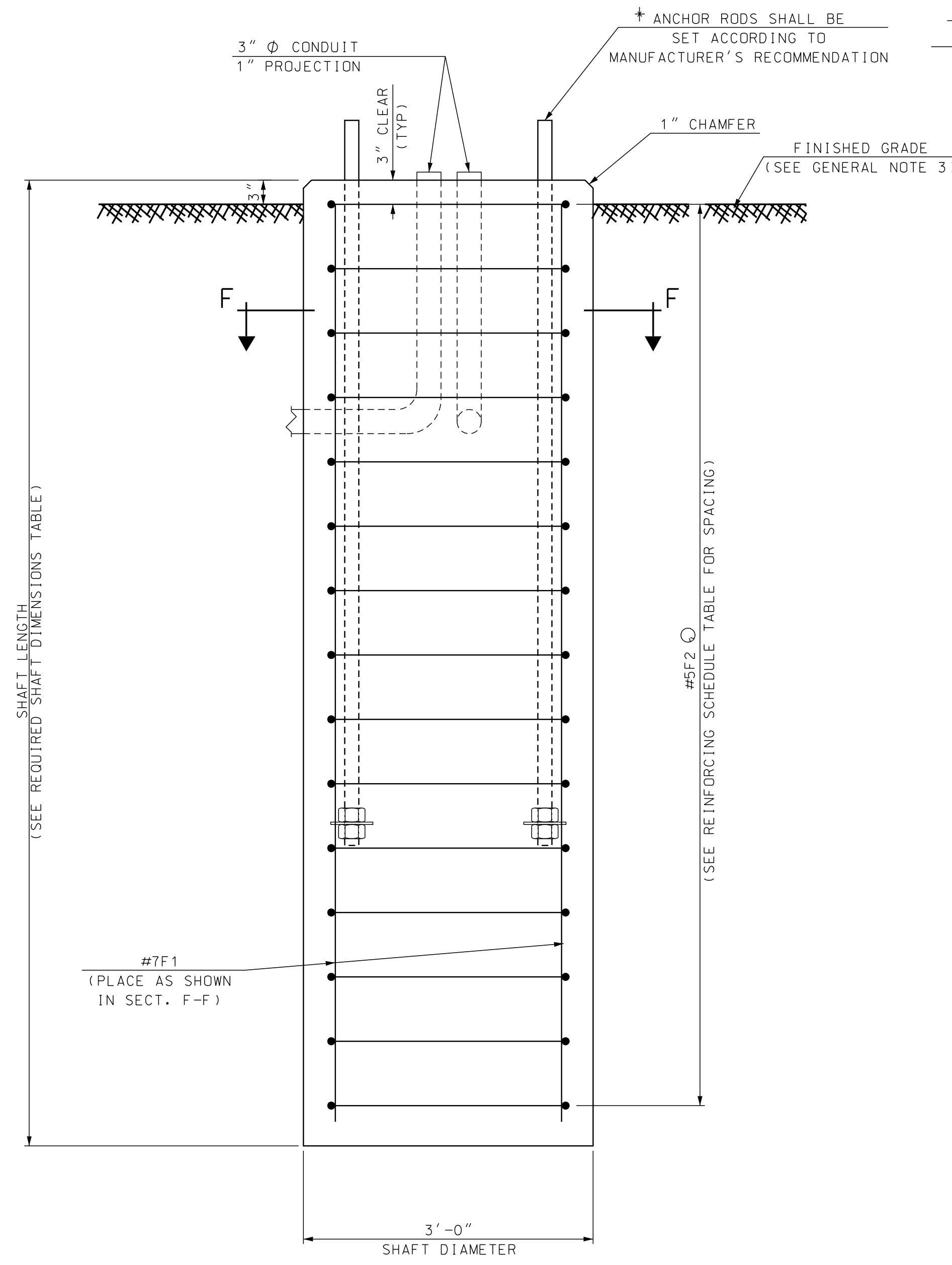
- THERE SHALL BE A MINIMUM OF ONE TEST BORING REQUIRED, AT THE APPROXIMATE FOUNDATION LOCATION, TO CONFIRM THE ENGINEERING PROPERTIES OF THE SOILS PROVIDING FOUNDATION SUPPORT. THE ENGINEER MAY REQUIRE ADDITIONAL BORINGS IF CONSIDERED NECESSARY.
- THE CIRCULAR SHAFT FOUNDATION SHALL BE CONSTRUCTED IN EITHER A DRILLED HOLE OR IN AN EXCAVATED HOLE PER THE NOTES PROVIDED BELOW FOR EACH METHOD. CAST IN PLACE CONCRETE SHALL BE AN OPTION FOR EITHER EXCAVATION METHOD. PRECAST CONCRETE SHALL ONLY BE USED WITH THE EXCAVATED HOLE METHOD.
- THE EVALUATION OF GEOTECHNICAL LATERAL CAPACITY IS BASED ON A SOIL MODEL COMPRISED OF HOMOGENEOUS GRANULAR (COHESIONLESS) SOILS HAVING A FRICTION ANGLE OF 32 DEGRESS, MAXIMUM GROUND SURFACE STEEPNESS OF 4H:1V, AND NEAR SURFACE GROUNDWATER TABLE. IF THE SOIL PROVIDING FOUNDATION SUPPORT CANNOT GENERATE AN EQUIVALENT OR GREATER LATERAL CAPACITY, AS COMPARED TO THIS SOIL MODEL, THEN THE ENGINEER WILL REVIEW THE FOUNDATION CONDITIONS WITH THE GEOTECHNICAL SECTION AND EVALUATE WHETHER A REDESIGN IS REQUIRED.
- TRENCHES FOR THE CONDUITS SHALL BE HAND DUG NEAR THE PROPOSED FOUNDATION, DISTURBING AS LITTLE SOIL AS POSSIBLE IN PLACING OF THE CONDUITS (APPROXIMATELY 2.5 FT MAXIMUM DOWN FROM THE EXISTING GROUND SURFACE). THE RESULTING TRENCHES SHALL BE BACKFILLED WITH STRUCTURAL FILL CONFORMING TO SECTION 508.
- WHERE BEDROCK IS ENCOUNTERED, A REDUCTION IN CIRCULAR SHAFT LENGTH MAY BE POSSIBLE FOR THE DRILLED HOLE METHOD ONLY, AS DESCRIBED IN THE DRILLED HOLE NOTES.
- CAST IN PLACE CONCRETE SHALL BE CLASS A HAVING A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI AND BE PLACED IN CONFORMANCE WITH SECTION 520. CYLINDERS FOR STRENGTH TESTING SHALL BE TAKEN DURING CONCRETE PLACEMENT.
- CONCRETE FOR A PRECAST CIRCULAR SHAFT FOUNDATION SHALL BE CLASS AAA WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 5000 PSI CONSTRUCTED IN CONFORMANCE WITH SECTION 520. INSPECTION BY A DEPARTMENT REPRESENTATIVE DURING THE PRECASTING AT THE PLANT IS REQUIRED. CONTACT THE BUREAU OF MATERIALS AND RESEARCH AT 271-1656 TO ARRANGE FOR PLANT INSPECTION AT LEAST 14 DAYS PRIOR TO CASTING.
- STAINLESS STEEL STD. GR. WIRE CLOTH, 1/4" MAX. OPENING WITH MIN. WIRE DIA. OF AWG NO. 16 WITH 2" LAP. SECURE WITH 3/4" STAINLESS STEEL BANDING AFTER ANCHOR RODS ARE FULLY TIGHTENED.
- NO GROUT SHALL BE PLACED BETWEEN THE FOUNDATION AND BOTTOM OF THE BASE PLATE.
- THE EXPOSED LENGTH OF THE ANCHOR ROD BETWEEN THE TOP OF THE FOUNDATION AND THE BOTTOM OF THE LEVELING NUT SHOULD NOT EXCEED ONE ROD DIAMETER (MAXIMUM) OR 1-INCH (PREFERRED).
- FOR THE INSTALLATION, PRETENSIONING AND ULTRASONIC TESTING OF ANCHOR RODS, SEE THE SPECIAL PROVISION AMENDMENT TO SECTION 616, TRAFFIC SIGNALS.
- ALL REINFORCING STEEL SHALL CONFORM TO AASHTO M31/M31M, GRADE 60 (420). ALL REINFORCING STEEL SHALL BE A MINIMUM OF 3 INCHES FROM CONCRETE SURFACES, UNLESS NOTED OTHERWISE, AND MEET THE REQUIREMENTS OF SECTION 544.
- TYPE 2 FOUNDATIONS SHALL BE PAID FOR UNDER ITEM 616.1XX.

DRILLED HOLES

- THE CIRCULAR SHAFT FOUNDATION SHALL BE CONSTRUCTED OF CAST IN PLACE CONCRETE AGAINST UNDISTURBED MATERIAL USING TEMPORARY CASING IF NECESSARY. THE CONCRETE MIX SHALL BE CAPABLE OF FLOWING THROUGH THE REINFORCING CAGE TO THE EXCAVATION SIDES WITH MINIMAL USE OF VIBRATION EQUIPMENT WHETHER THE METHOD OF PLACEMENT IS FREEFALL OR UNDERWATER. THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER FOR VISUAL INSPECTION OF THE EXCAVATION, THE ARRANGEMENT OF THE REINFORCING BARS, AND THE ANCHOR BOLTS PRIOR TO CONCRETE PLACEMENT.
- THE EXPOSED PORTION OF THE SHAFT AND TO A DEPTH OF AT LEAST 12 INCHES SHALL HAVE A FORMED APPEARANCE WITH THE TOP HAVING A SMOOTH LEVEL FINISH.
- UNDERWATER PLACEMENT PROCEDURES (TREMIE OR PUMPING METHODS) SHALL BE REQUIRED WITHIN A DRILLED HOLE WHERE THE STANDARDS FOR A DRY EXCAVATION AND FREE FALL PLACEMENT METHOD CANNOT BE MET. THE WATER LEVEL WITHIN A DRILLED HOLE SHALL BE AT A STABILIZED, STATIC LEVEL AT THE TIME OF CONCRETE PLACEMENT.
- WHERE BEDROCK IS ENCOUNTERED, THE DRILL SHALL PENETRATE THE BEDROCK A MINIMUM OF 3 FEET AND IN ALL CASES A MINIMUM SHAFT LENGTH OF 5 FEET SHALL BE OBTAINED. IT IS NOT NECESSARY TO EXTEND THE SHAFT IN BEDROCK BEYOND THE SPECIFIED SOIL-BASED LENGTH GIVEN ON THE PLANS.
- WHERE FILL EMBANKMENT IS TO BE CONSTRUCTED ABOVE THE EXISTING GROUND, THE EMBANKMENT SHALL BE BUILT PRIOR TO CONSTRUCTING THE SHAFT. PLACEMENT AND COMPACTION OF THE FILL SHALL BE IN ACCORDANCE WITH SECTION 203.
- IF THE DRILLED HOLE METHOD IS PERFORMED AND THE SOILS ARE FOUND TO BE UNSUITABLE, AN EXCAVATED HOLE SHALL BE COMPLETED AS APPROVED BY THE ENGINEER.

EXCAVATED HOLES

- AS AN ALTERNATIVE TO A DRILLED HOLE, THE CIRCULAR SHAFT FOUNDATION CONCRETE SHALL BE CONSTRUCTED IN AN EXCAVATED HOLE. THE FOUNDATION SHALL BE CAST IN PLACE USING FORMS (WHICH MUST BE REMOVED) OR ALTERNATIVELY A PRECAST CIRCULAR SHAFT FOUNDATION SHALL BE INSTALLED.
- THE EXCAVATED HOLE SHALL BE AT LEAST 3 FT CLEAR OF THE FOUNDATION SIDES AND 1 FT DEEPER THAN THE FOUNDATION.
- ANY BEDROCK ENCOUNTERED SHALL BE REMOVED TO THE SAME LIMITS AS DESCRIBED FOR SOIL (SEE PREVIOUS NOTE). IF THIS IS NOT POSSIBLE THEN THE ENGINEER SHALL REQUEST A REDESIGN.
- THE EXCAVATED HOLE SHALL BE BACKFILLED TO THE LIMITS OF EXCAVATION WITH STRUCTURAL FILL ACCORDING TO SECTION 508. NO PAYMENT SHALL BE MADE FOR STRUCTURAL FILL OR EXCAVATION.



ELEVATION VIEW

REQUIRED SHAFT DIMENSIONS		
SHAFT DIAMETER AND LENGTH	CASE 1 WITH LUMINAIRE	CASE 2 WITHOUT LUMINAIRE
		<p>MAX h = 40'-0" MAX h1 = 20'-0"</p>
3'-0"x8'-0"	-	MAX L = 20'-0"
3'-0"x9'-0"	MAX L = 20'-0"	MAX L = 25'-0"
3'-0"x10'-0"	MAX L = 35'-0"	MAX L = 40'-0"
3'-0"x11'-0"	MAX L = 50'-0"	MAX L = 55'-0"
3'-0"x12'-0"	MAX L = 60'-0"	MAX L = 60'-0"

** NOTE: SEE TRAFFIC SIGNAL MAST ARM LAYOUT SPECIAL DETAIL FOR ATTACHMENT LAYOUTS. ATTACHMENT COMBINATIONS OTHER THAN THOSE SHOWN ON THE SPECIAL DETAIL SHALL NOT BE USED WITHOUT DESIGN APPROVAL FROM EITHER THE BUREAU OF BRIDGE DESIGN OR THE BUREAU OF TRAFFIC.

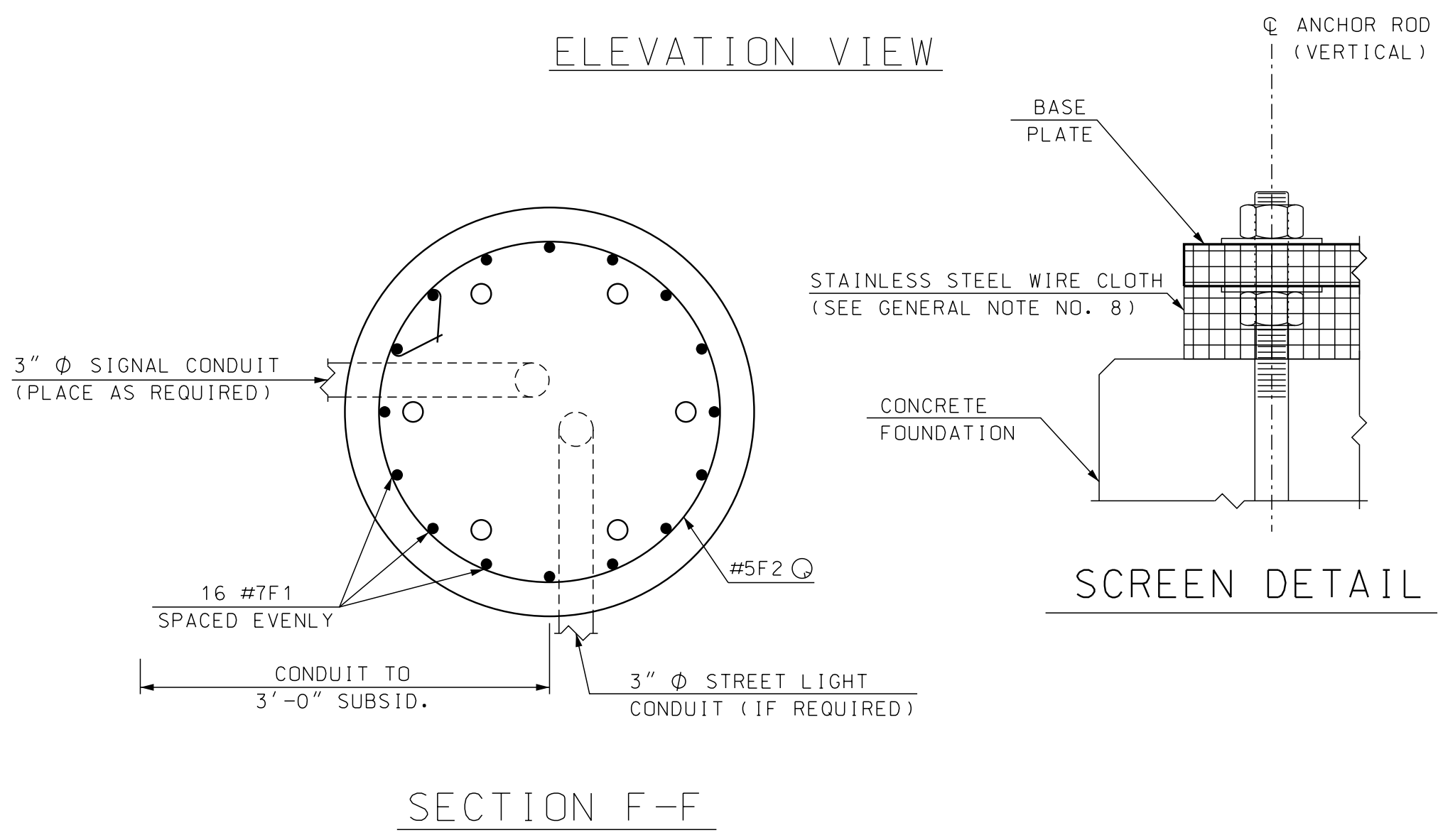
TYPICAL QUANTITIES FOR SHAFT LENGTH							
ITEM NUMBER	ITEM	UNIT	QUANTITY PER SHAFT LENGTH (MIN)				
			8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
▲508*	STRUCTURAL FILL	CY	20	22	24	26	28
520.1*	CONCRETE CLASS A	CY	2.1	2.4	2.6	2.9	3.1
OR	CONCRETE CLASS AAA						
▲520.001*	CONCRETE CLASS AAA	LB	342	384	455	556	608
544*	REINFORCING STEEL	LB	342	384	455	556	608

* ITEM NUMBERS ARE FOR SPECIFICATION REFERENCE ONLY. NO SEPARATE PAYMENT WILL BE MADE FOR THESE ITEMS.
▲ DENOTES EXCAVATED HOLE METHOD OF CONSTRUCTION FOR CIRCULAR SHAFTS

REINFORCING SCHEDULE					
SHAFT LENGTH	MARK	TYPE	BAR #	# OF BARS	UNBENT LENGTH
8'-0"	F1	—	#7	16	7'-6"
	F2	⊙	#5	10 @ 10"	9'-3"
9'-0"	F1	—	#7	16	8'-6"
	F2	⊙	#5	11 @ 10"	9'-3"
10'-0"	F1	—	#7	16	9'-6"
	F2	⊙	#5	15 @ 8"	9'-3"
11'-0"	F1	—	#7	16	10'-6"
	F2	⊙	#5	22 @ 6"	9'-3"
12'-0"	F1	—	#7	16	11'-6"
	F2	⊙	#5	24 @ 6"	9'-3"

STANDARD 135° BENDS

† ANCHOR RODS SHALL BE STRAIGHT RODS AND CONFORM TO ASTM F1554 GRADE 50 (MIN.). GALVANIZE THE ENTIRE ROD PER ASTM A153. EACH ANCHOR ROD SHALL BE SUPPLIED WITH A MINIMUM OF THREE HEX NUTS (ASTM A563 OR ASTM A194) AND A MINIMUM OF TWO FLAT HARDENED WASHERS (ASTM F436). LOCK WASHERS SHALL NOT BE USED. THE EMBEDDED END OF THE ANCHOR ROD SHALL HAVE EITHER ONE NUT TACKED WELDED OR DOUBLE NUTS. BENT (HOOKED OR J-BOLT) ANCHOR RODS SHALL NOT BE USED.



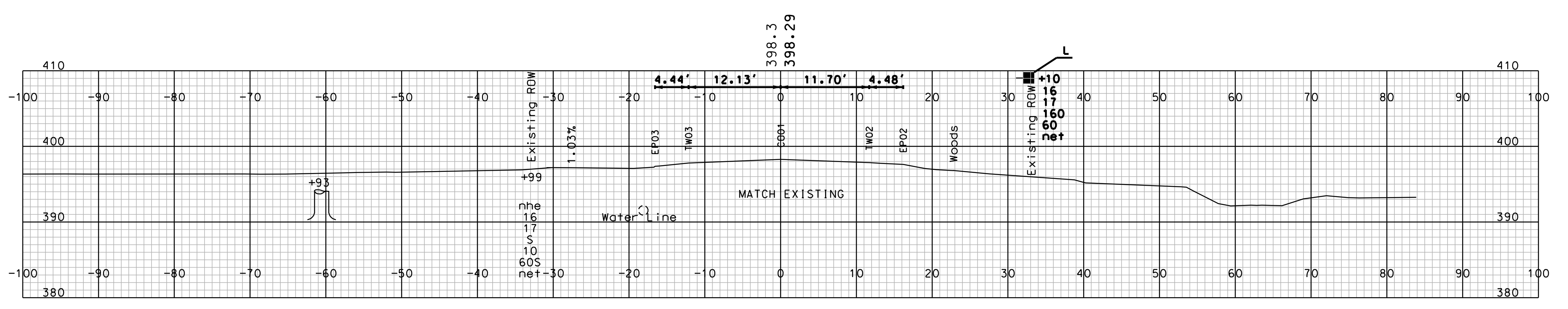
SECTION F-F

STATE OF NEW HAMPSHIRE				
DEPARTMENT OF TRANSPORTATION • BUREAU OF TRAFFIC				
Traffic Signal Mast Arm Foundation - Type 2				
REVISION DATE	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
03-05-18	SD-TS-04	24861	38	53

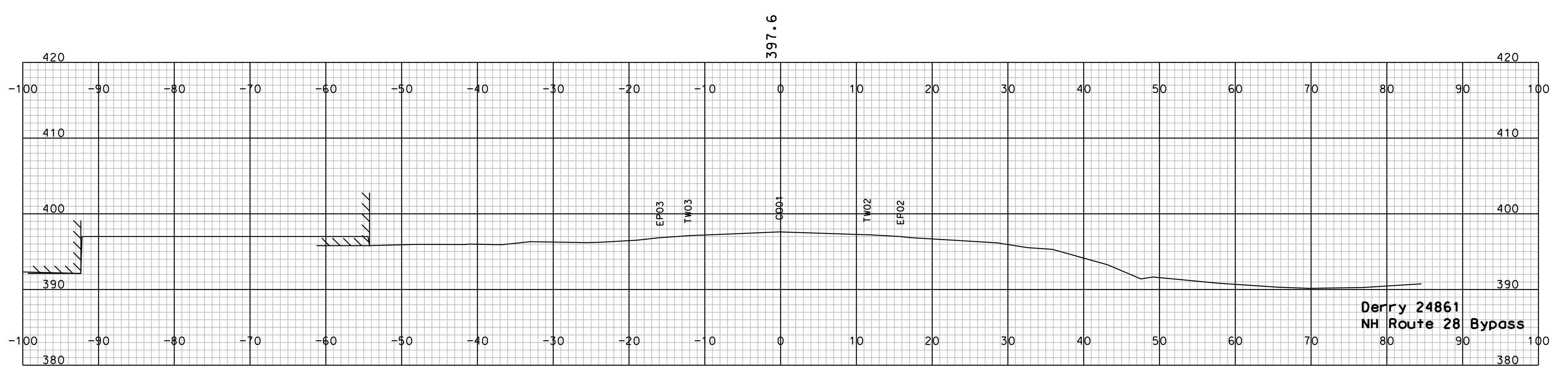
SPECIAL DETAIL SD-TS-04

SDR PROCESSED	SEL	DATE	9/18/2013
NEW DESIGN	ENP	DATE	8/2018
SHEET CHECKED	TWC	DATE	8/2018
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL				
NUMBER	DATE	STATION	STATION	DESCRIPTION



STA. 105+00

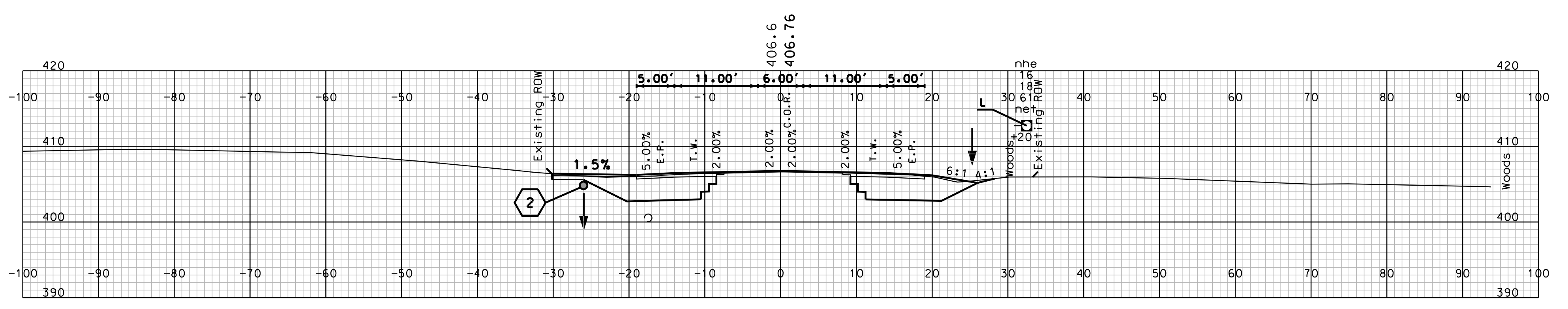


STA. 104+50

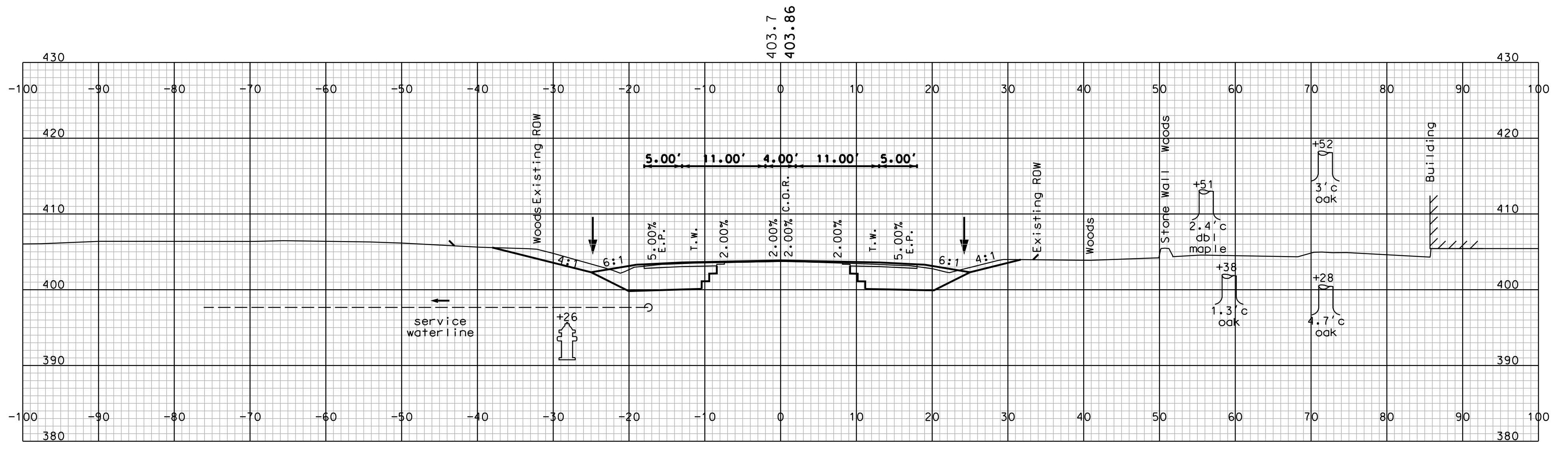
SHEET TOTALS					
COMMON EXCAV.	—	C.Y.	ROCK EXCAV.	—	C.Y.
FILL	—	C.Y.	MUCK EXCAV.	—	C.Y.
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS		
24861_MC1M-XS	24861	39	53		

SDR PROCESSED	SEL	DATE	9/2013
NEW DESIGN	ENP	DATE	8/2018
SHEET CHECKED	TWC	DATE	8/2018
AS BUILT DETAILS		DATE	

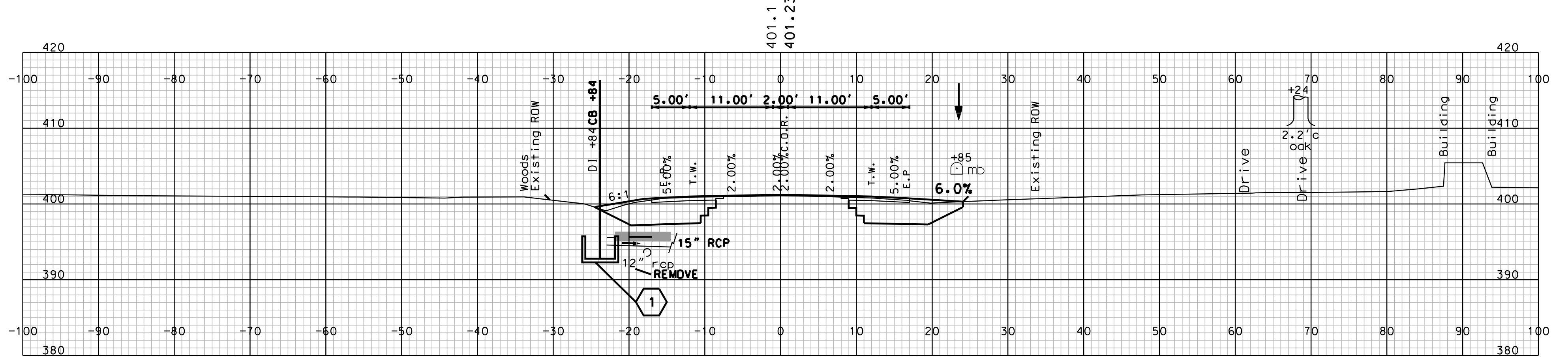
REVISIONS AFTER PROPOSAL				
NUMBER	DATE	STATION	STATION	DESCRIPTION



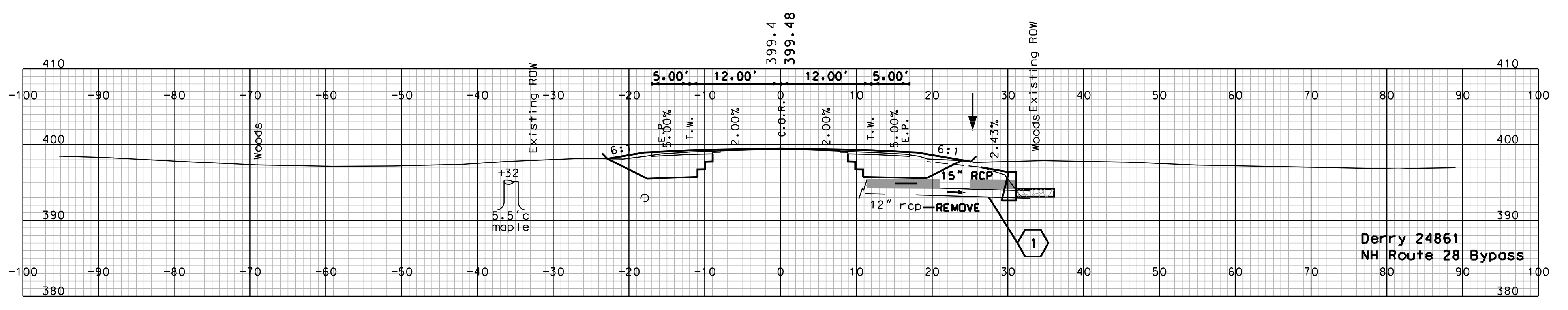
STA. 107+00



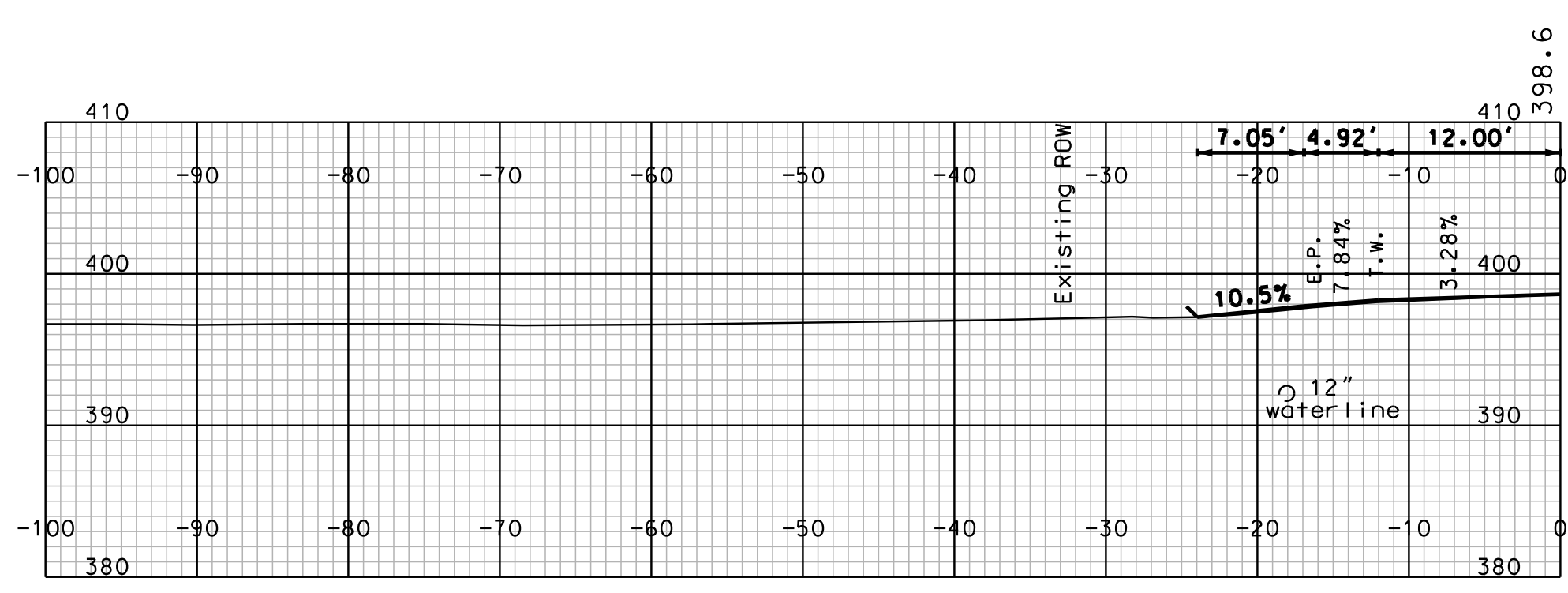
STA. 106+50



STA. 106+00



STA. 105+50

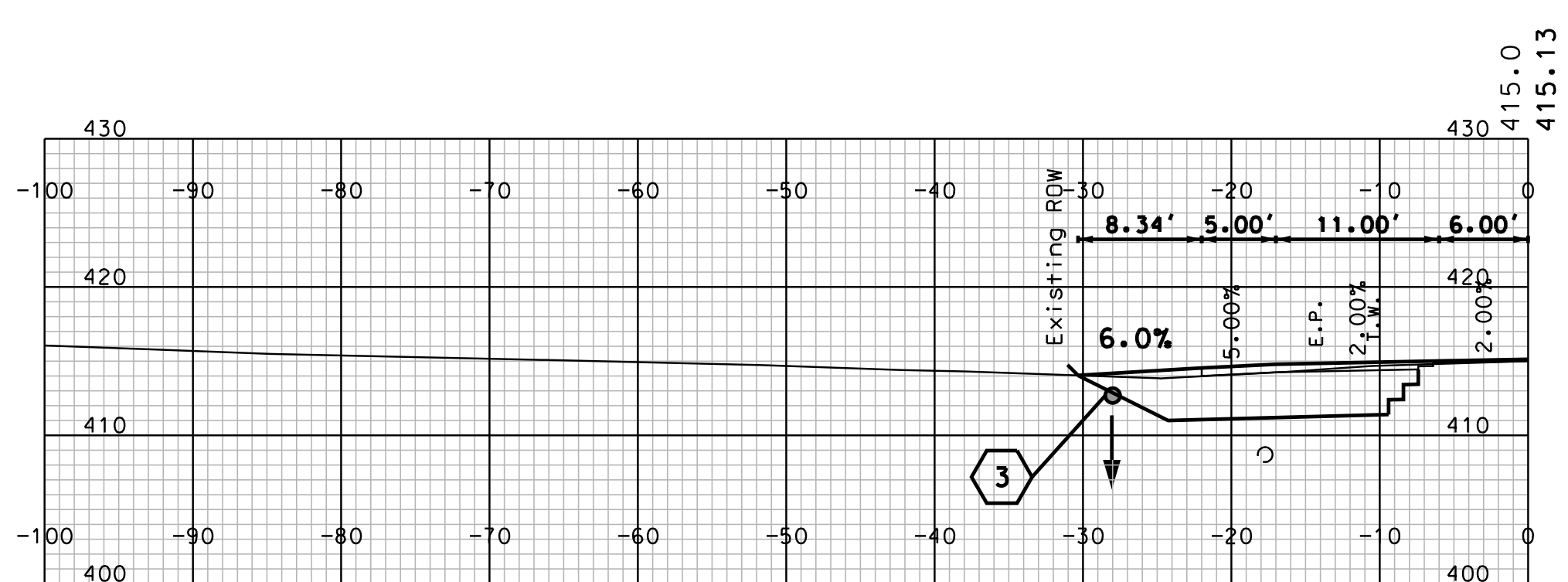


STA. 105+17
DRIVE LT

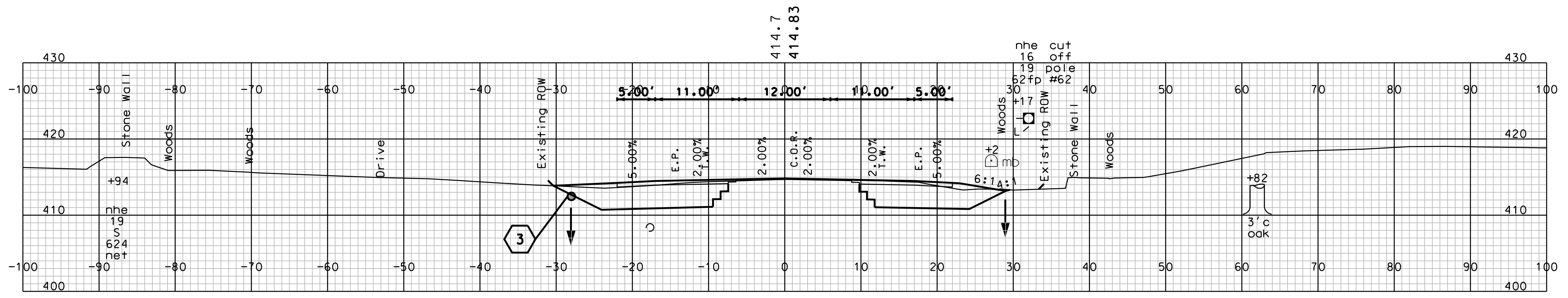
SHEET TOTALS					
COMMON EXCAV.	543.3	C.Y.	ROCK EXCAV.	-	C.Y.
FILL	0.1	C.Y.	MUCK EXCAV.	-	C.Y.
DGN	STATE PROJECT NO.		SHEET NO.	TOTAL SHEETS	
24861_MC1M-XS	24861		40	53	

SDR PROCESSED	SEL	DATE	9/2013
NEW DESIGN	ENP	DATE	8/2018
SHEET CHECKED	TWC	DATE	8/2018
AS BUILT DETAILS		DATE	

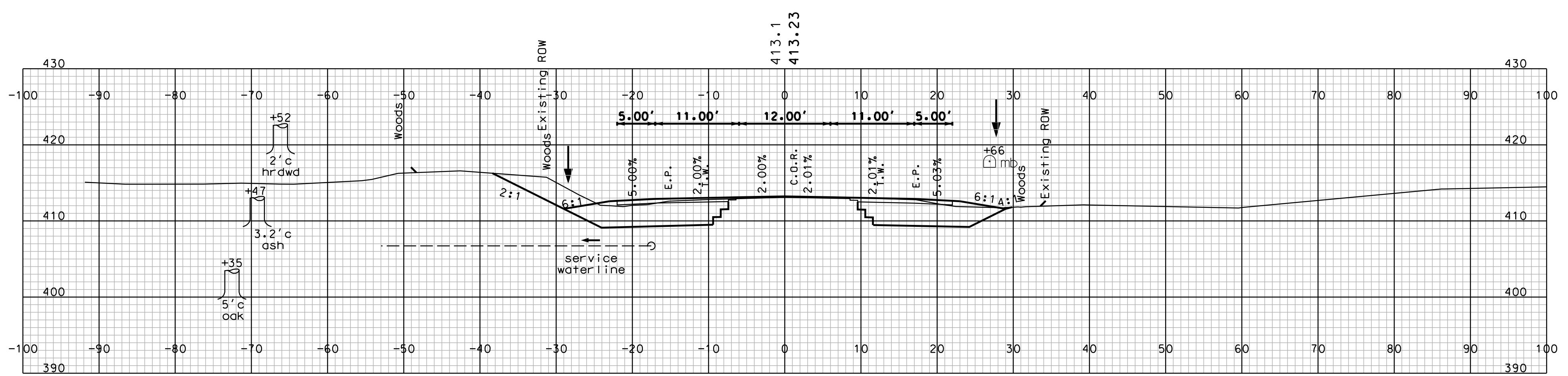
REVISIONS AFTER PROPOSAL				
NUMBER	DATE	STATION	STATION	DESCRIPTION



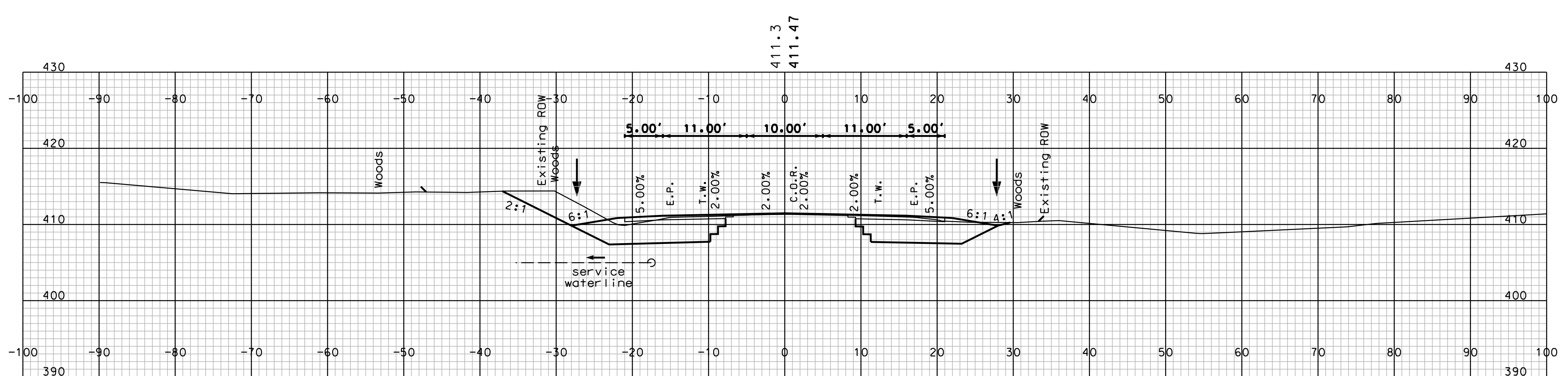
STA. 109+10
DRIVE LT



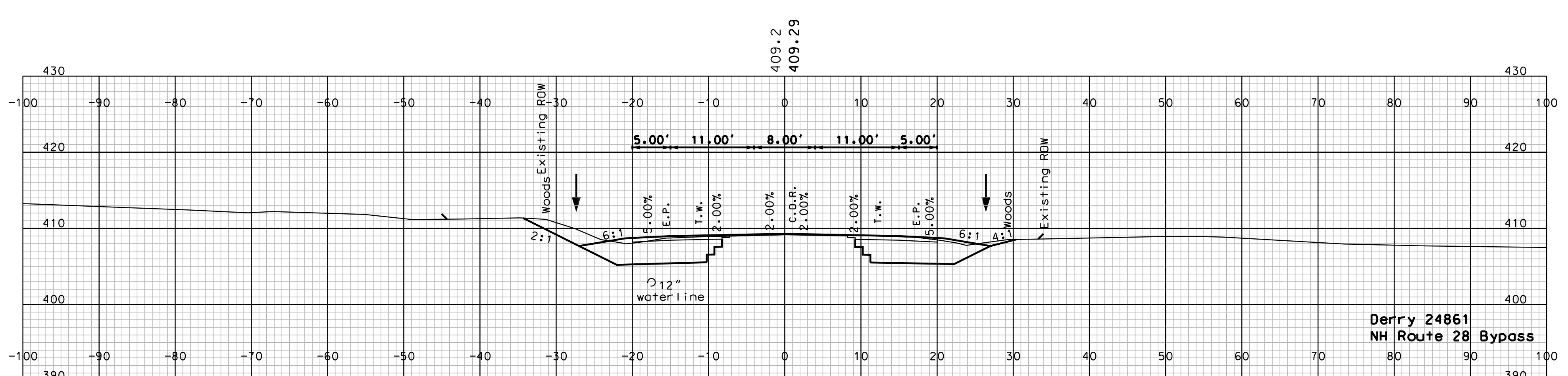
STA. 109+00



STA. 108+50



STA. 108+00



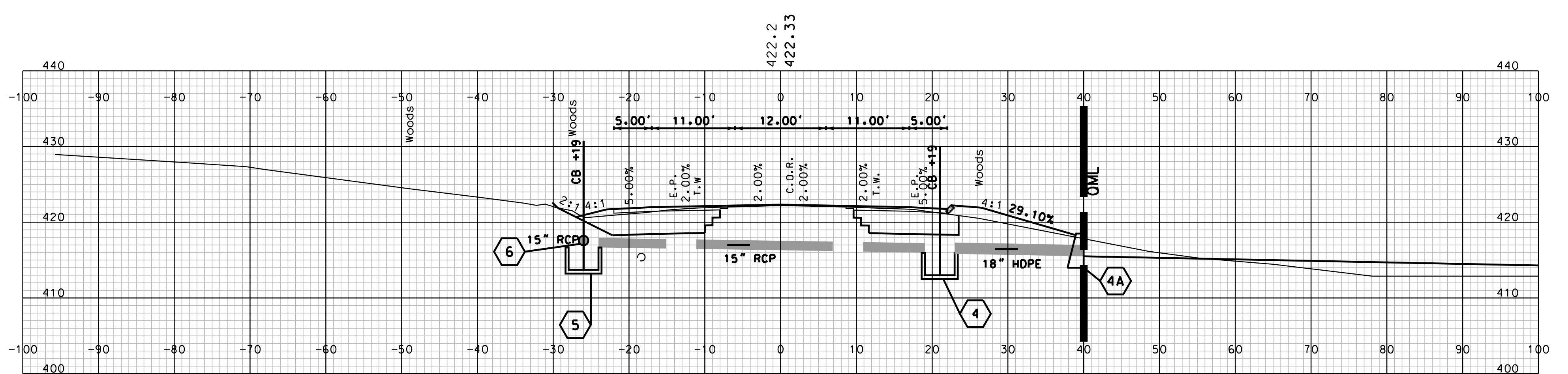
STA. 107+50

Derry 24861
NH Route 28 Bypass

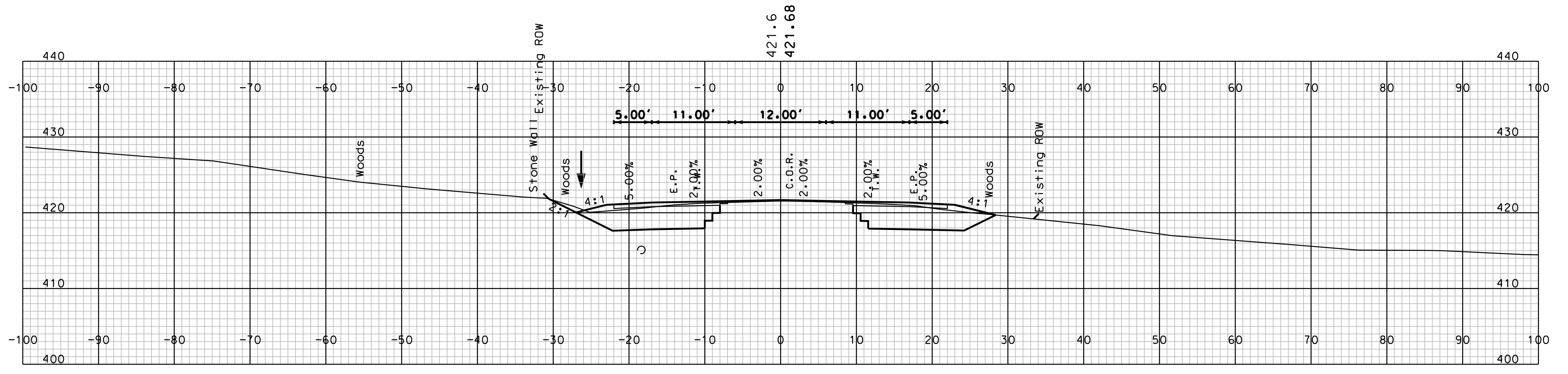
SHEET TOTALS					
COMMON EXCAV.	979.7	C.Y.	ROCK EXCAV.	-	C.Y.
FILL	0	C.Y.	MUCK EXCAV.	-	C.Y.
DGN	24861_MC1M-XS	STATE PROJECT NO.	24861	SHEET NO.	41
				TOTAL SHEETS	53

SDR PROCESSED	SEL	DATE	9/2013
NEW DESIGN	ENP	DATE	8/2018
SHEET CHECKED	TWC	DATE	8/2018
AS BUILT DETAILS		DATE	

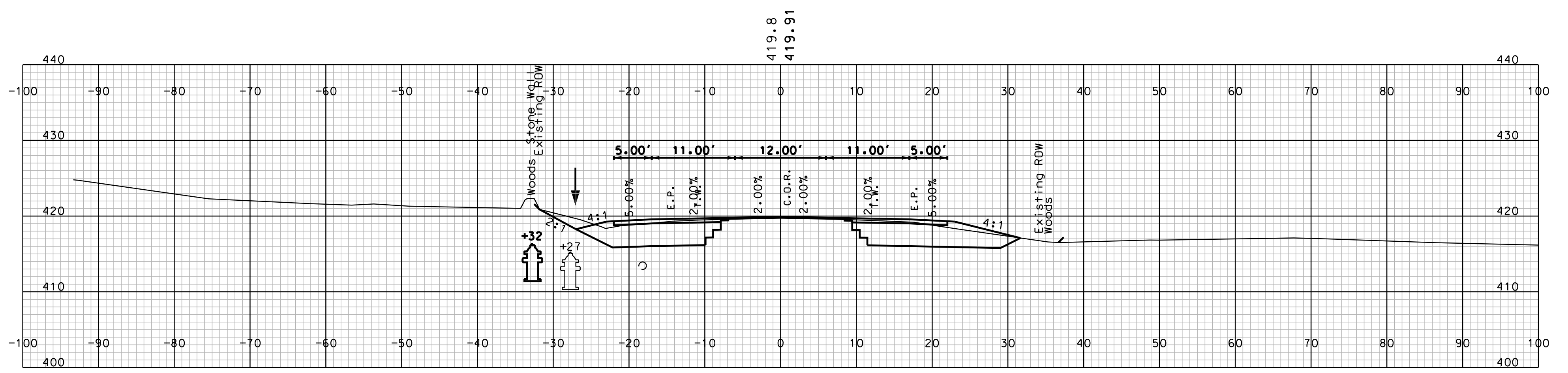
REVISIONS AFTER PROPOSAL				
NUMBER	DATE	STATION	STATION	DESCRIPTION



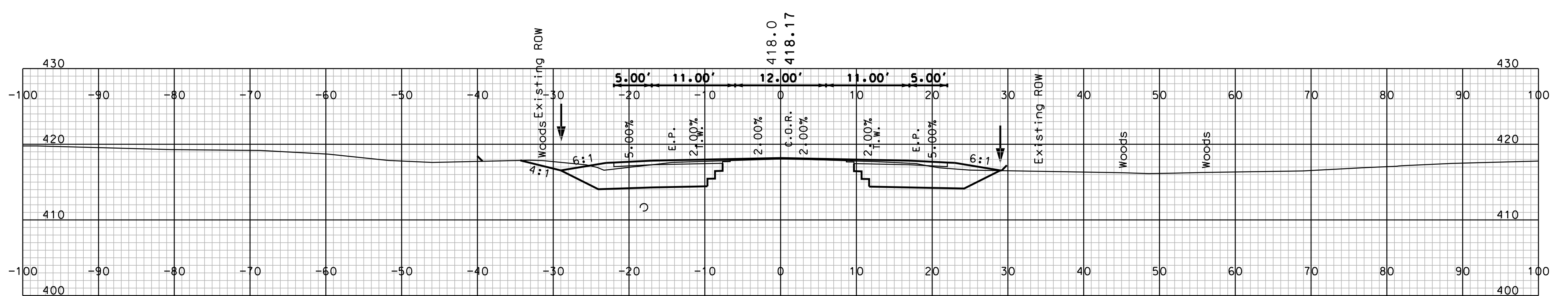
STA. 111+19



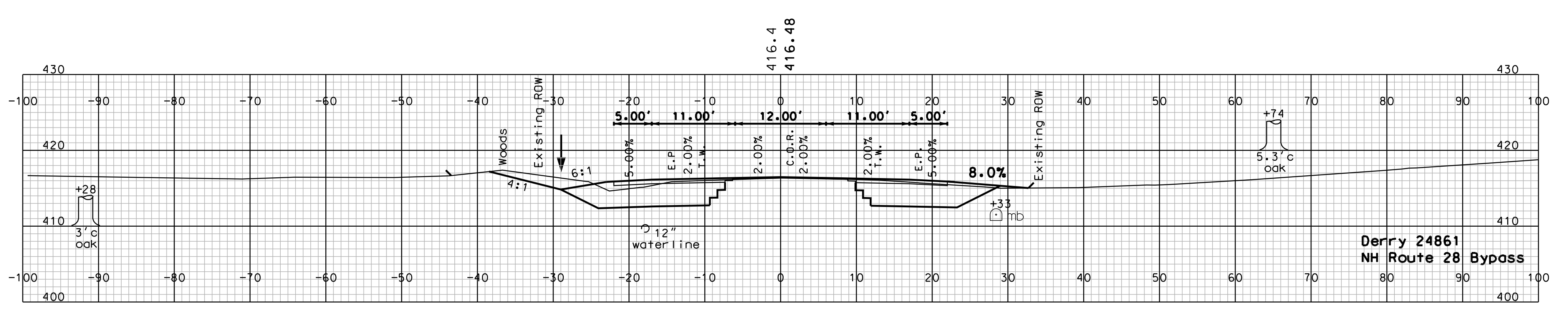
STA. 111+00



STA. 110+50



STA. 110+00



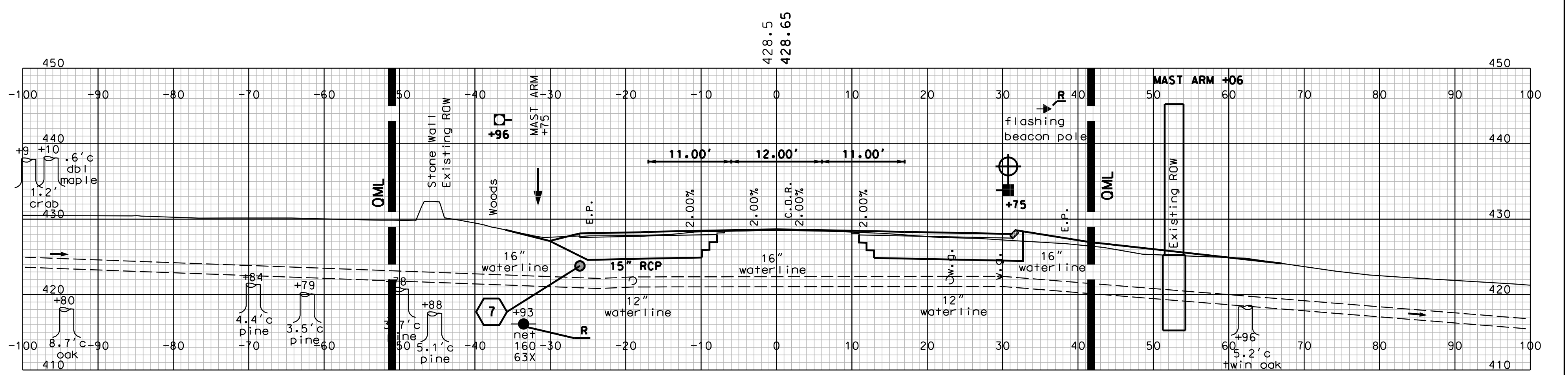
STA. 109+50

Derry 24861
NH Route 28 Bypass

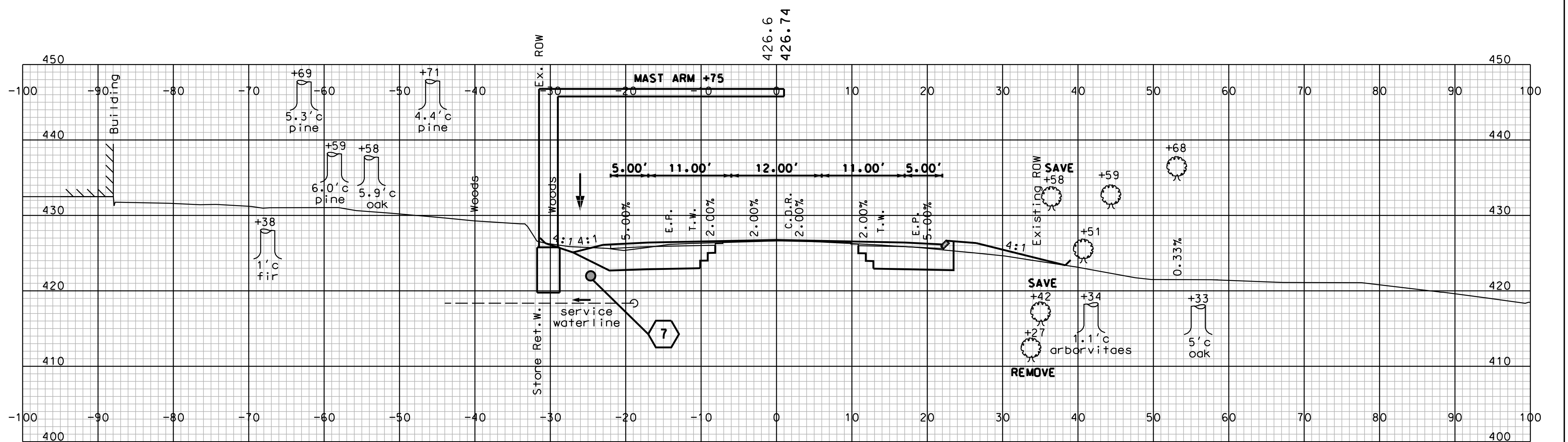
SHEET TOTALS					
COMMON EXCAV.	853.7	C.Y.	ROCK EXCAV.	-	C.Y.
FILL	5.2	C.Y.	MUCK EXCAV.	-	C.Y.
DGN	24861_MC1M-XS	STATE PROJECT NO.	24861	SHEET NO.	42
				TOTAL SHEETS	53

SDR PROCESSED	SEL	DATE	9/2013
NEW DESIGN	ENP	DATE	8/2018
SHEET CHECKED	TWC	DATE	8/2018
AS BUILT DETAILS		DATE	

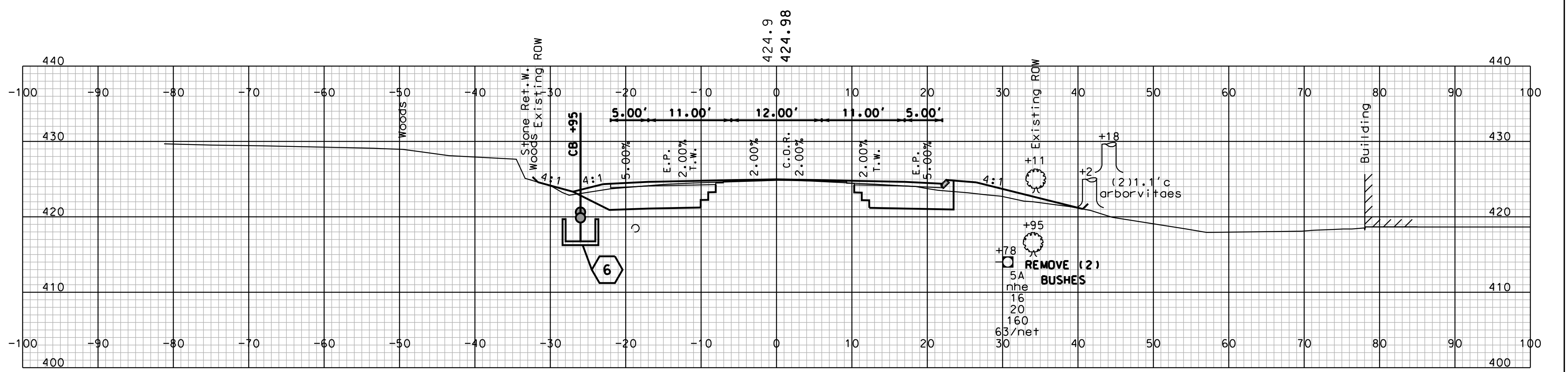
REVISIONS AFTER PROPOSAL				
NUMBER	DATE	STATION	STATION	DESCRIPTION



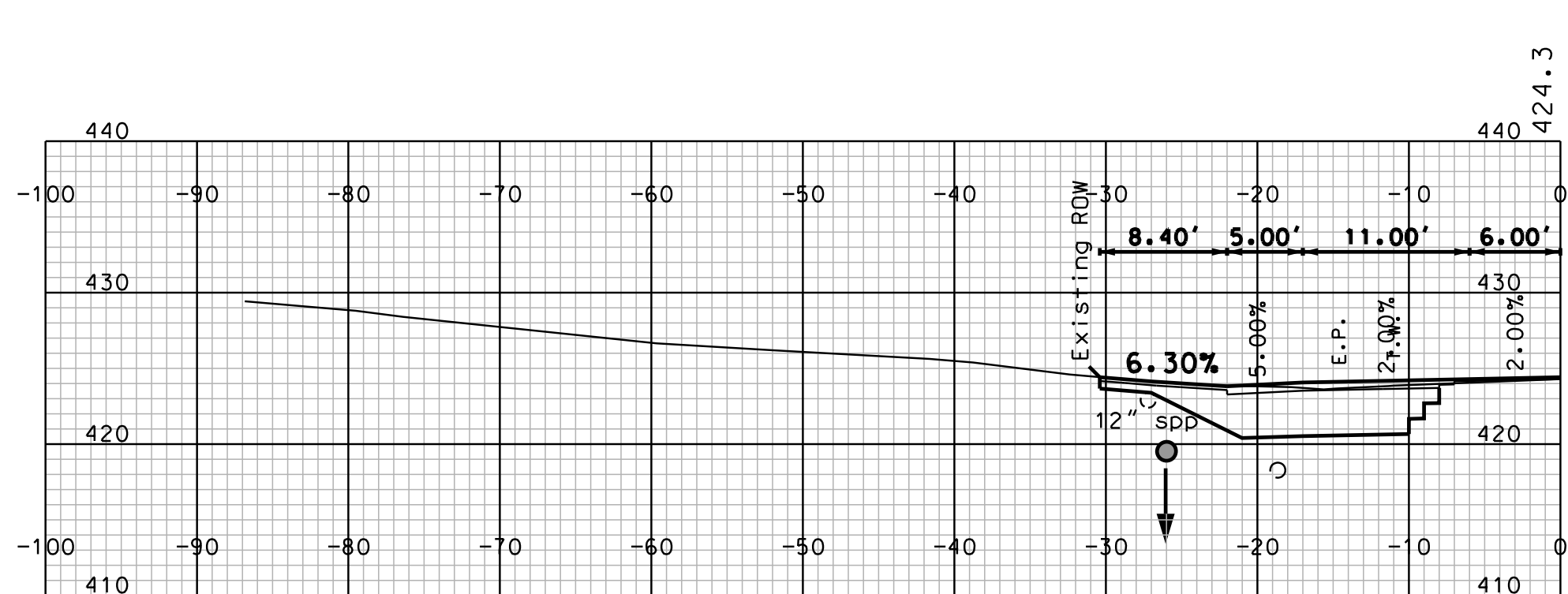
STA. 113+00



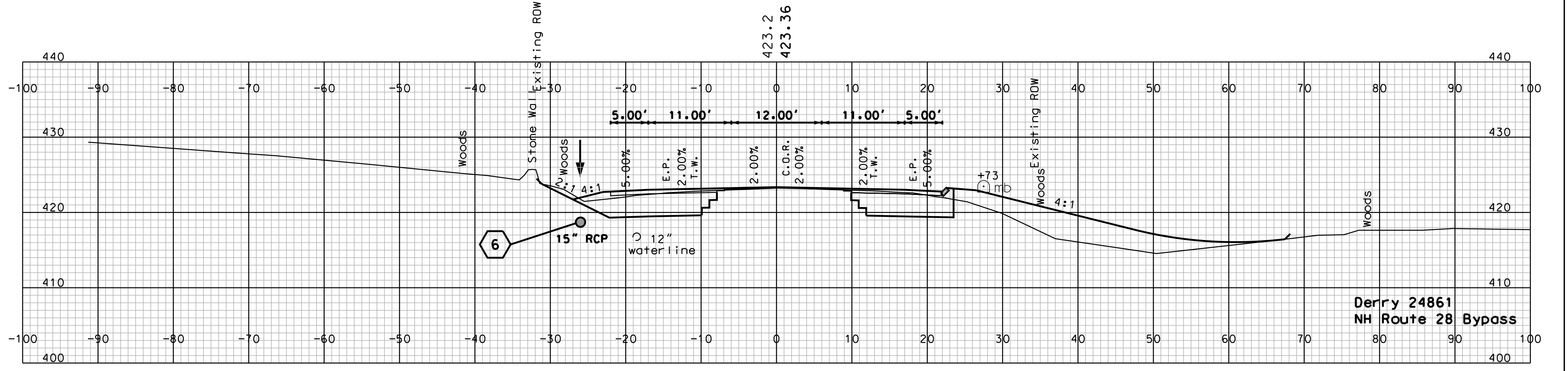
STA. 112+50



STA. 112+00



STA. 111+82
DRIVE LT



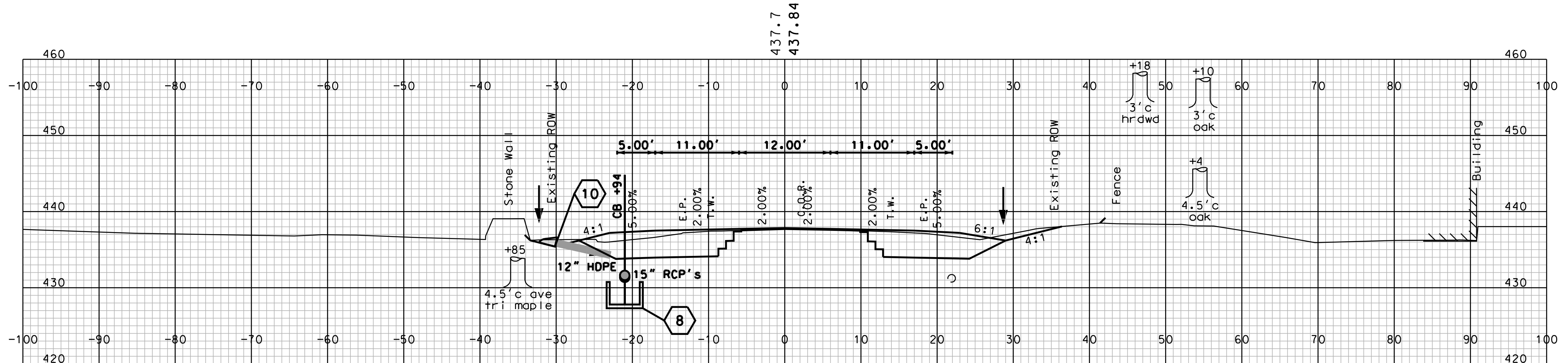
STA. 111+50

Derry 24861
NH Route 28 Bypass

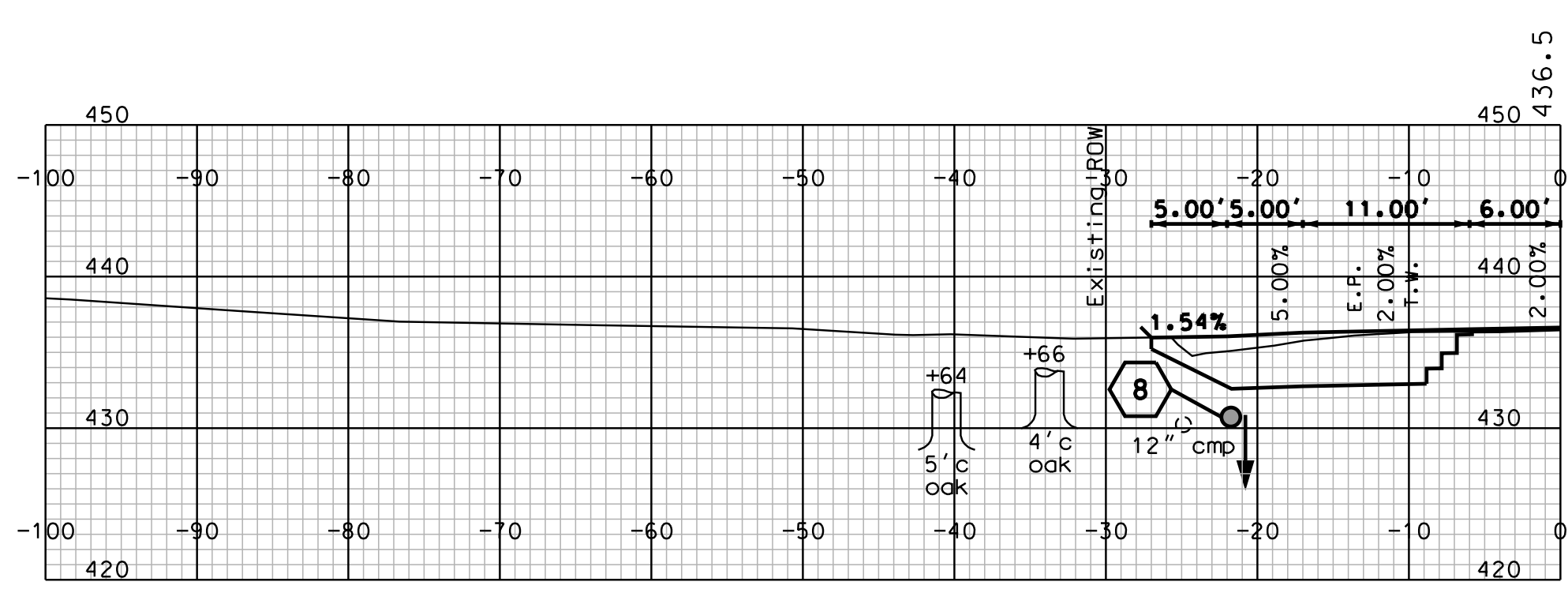
SHEET TOTALS					
COMMON EXCAV.	601.3	C.Y.	ROCK EXCAV.	-	C.Y.
FILL	196.97	C.Y.	MUCK EXCAV.	-	C.Y.
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS		
24861_MC1M-XS	24861	43	53		

SDR PROCESSED	SEL	DATE	9/2013
NEW DESIGN	ENP	DATE	8/2018
SHEET CHECKED	TWC	DATE	8/2018
AS BUILT DETAILS		DATE	

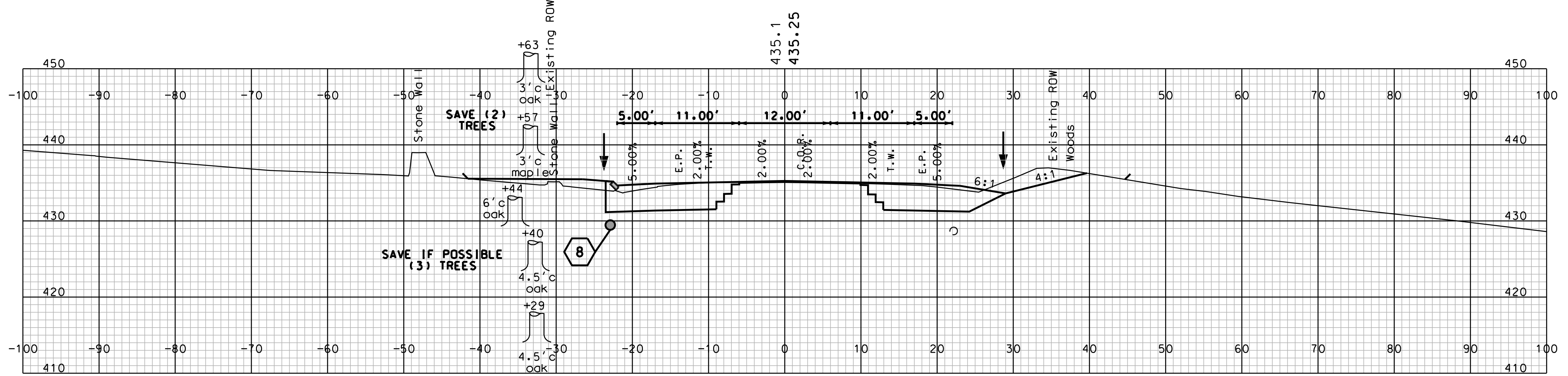
REVISIONS AFTER PROPOSAL				
NUMBER	DATE	STATION	STATION	DESCRIPTION



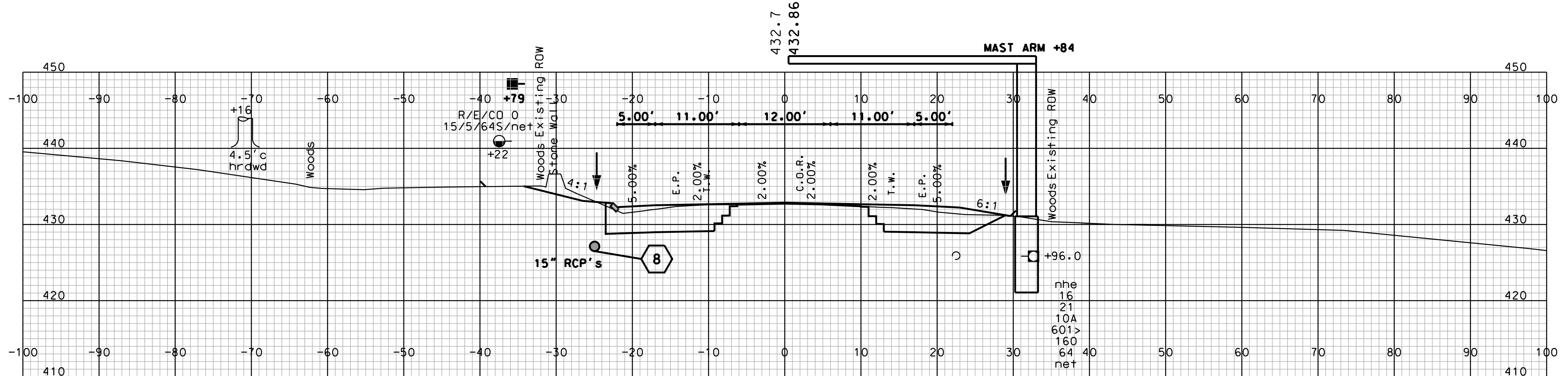
STA. 115+00



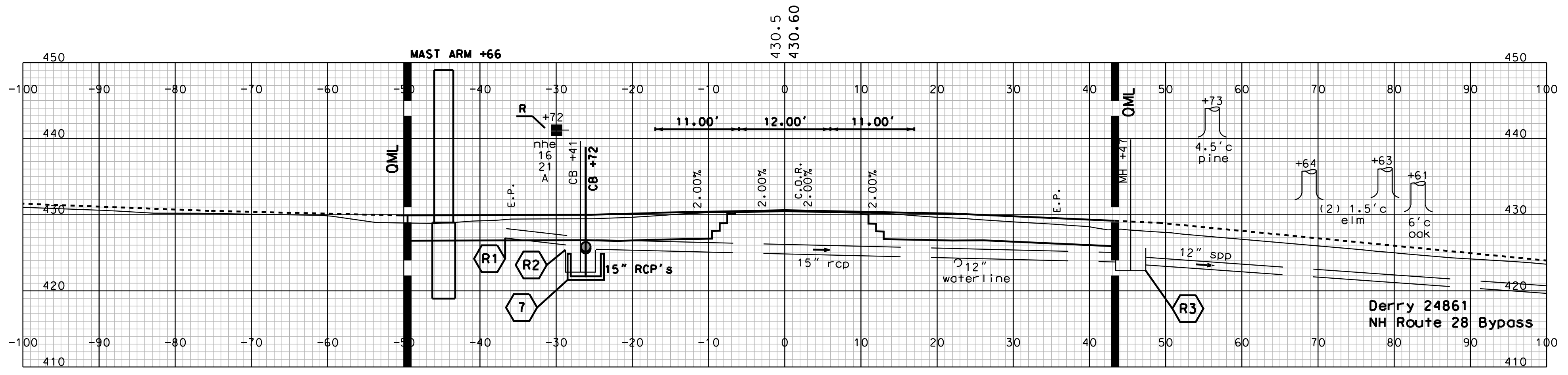
STA. 114+77
DRIVE LT



STA. 114+50



STA. 114+00

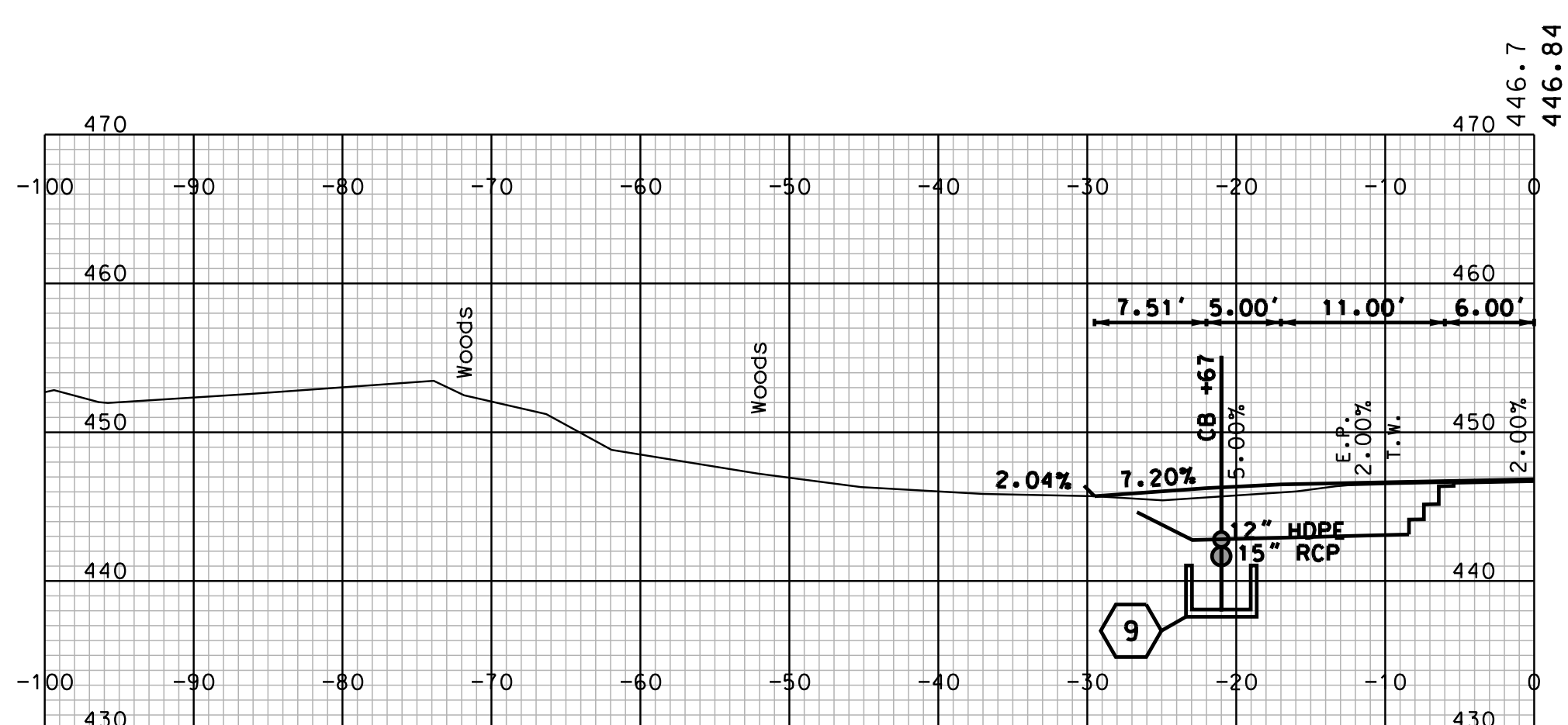


STA. 113+50

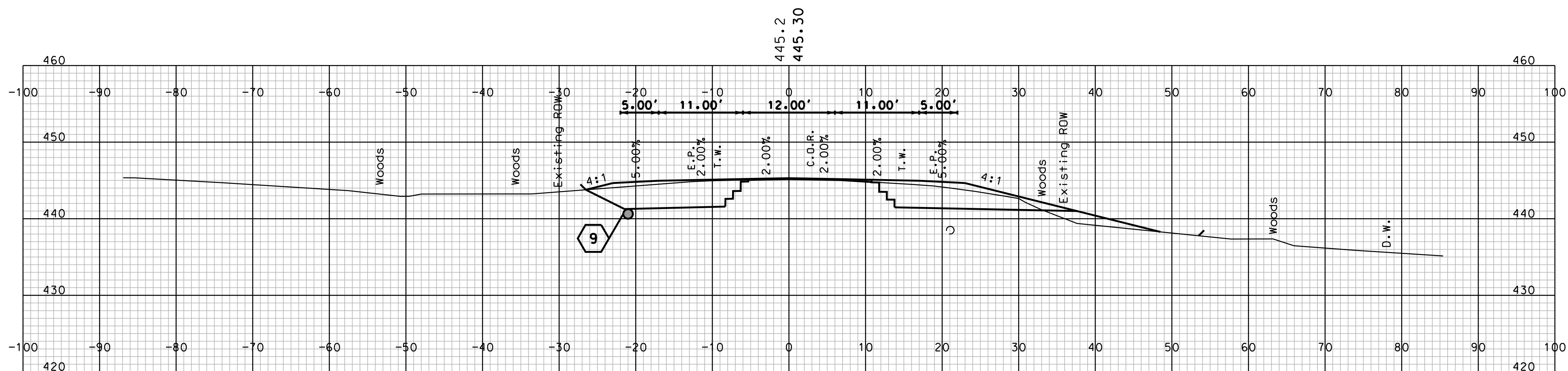
COMMON EXCAV.		SHEET TOTALS		ROCK EXCAV.	
964.2	C.Y.	28.8	C.Y.	-	C.Y.
FILL		MUCK EXCAV.			
28.8		-			
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS		
24861_MC1M-XS	24861	44	53		

SDR PROCESSED	SEL	DATE	9/2013
NEW DESIGN	ENP	DATE	8/2018
SHEET CHECKED	TWC	DATE	8/2018
AS BUILT DETAILS		DATE	

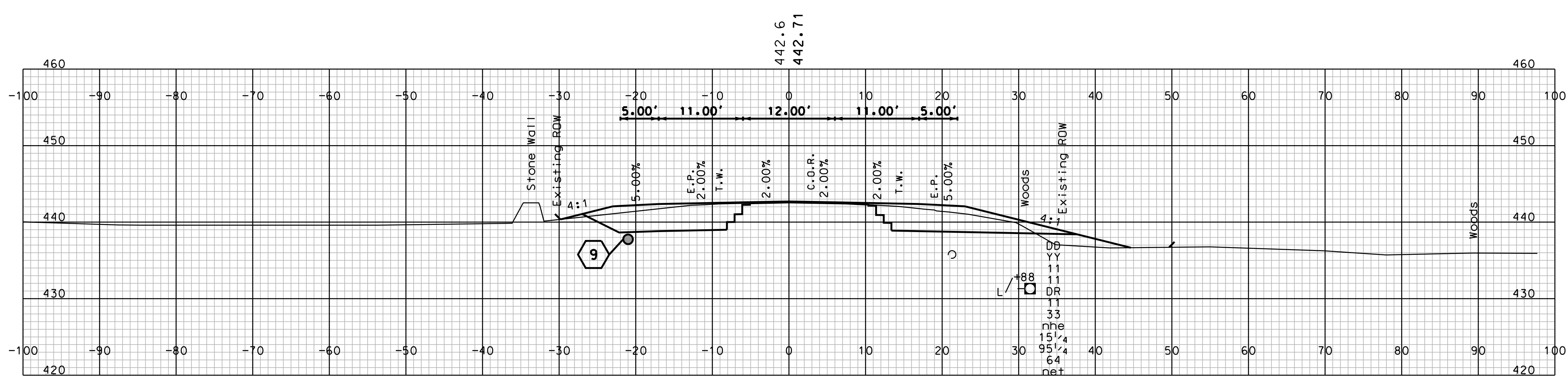
REVISIONS AFTER PROPOSAL				
NUMBER	DATE	STATION	STATION	DESCRIPTION



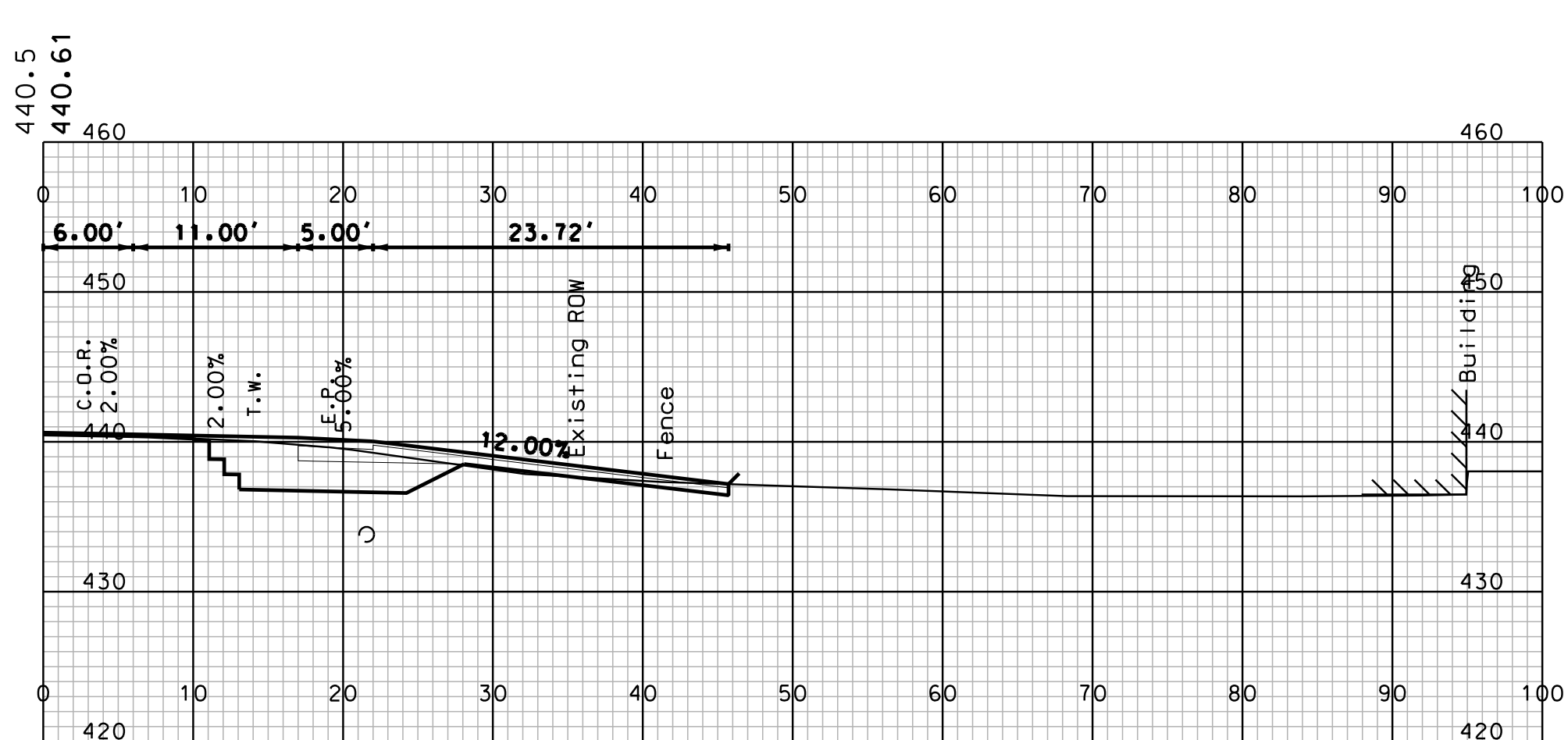
STA. 116+80
DRIVE LT



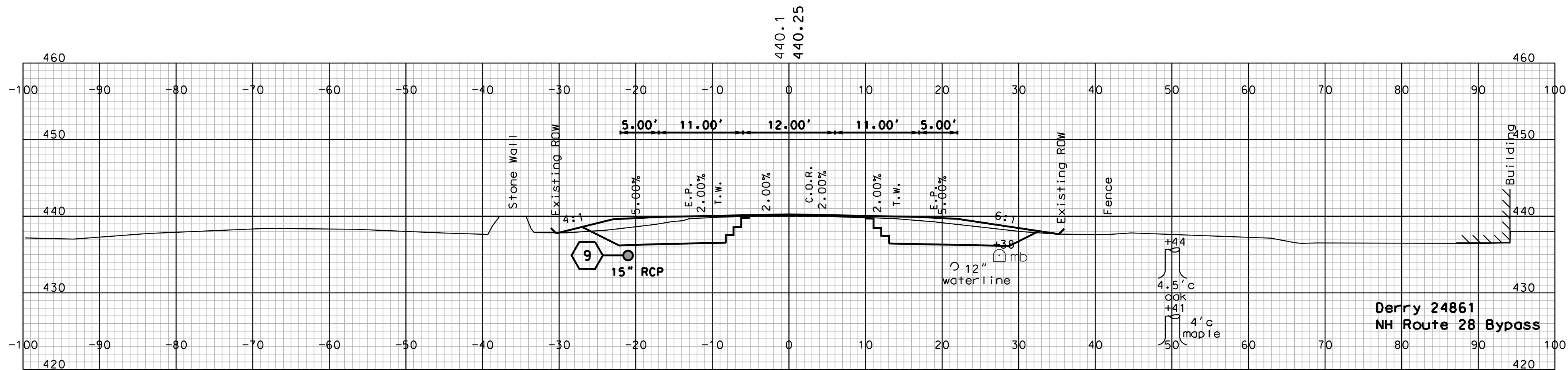
STA. 116+50



STA. 116+00



STA. 115+58
DRIVE RT



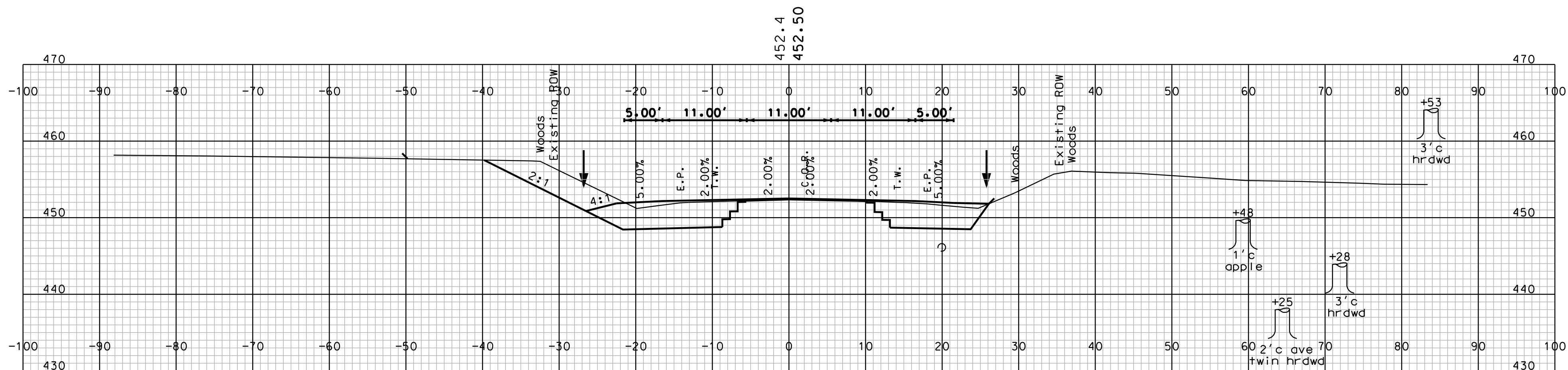
STA. 115+50

Derry 24861
NH Route 28 Bypass

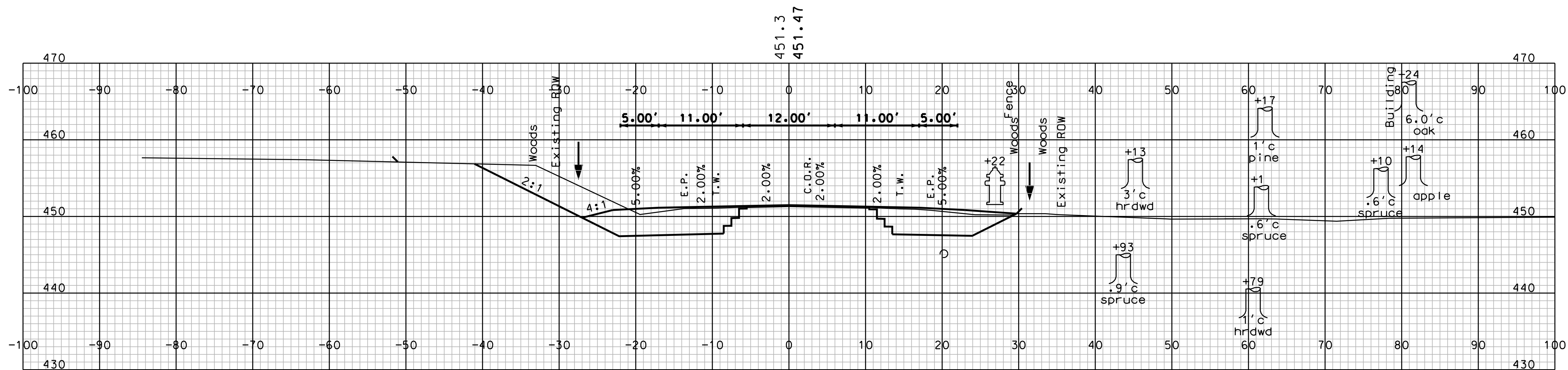
COMMON EXCAV.		SHEET TOTALS	
532.8	C.Y.	ROCK EXCAV.	- C.Y.
37.7	C.Y.	MUCK EXCAV.	- C.Y.
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
24861_MC1M-XS	24861	45	53

SDR PROCESSED	SEL	DATE	9/2013
NEW DESIGN	ENP	DATE	8/2018
SHEET CHECKED	TWC	DATE	8/2018
AS BUILT DETAILS		DATE	

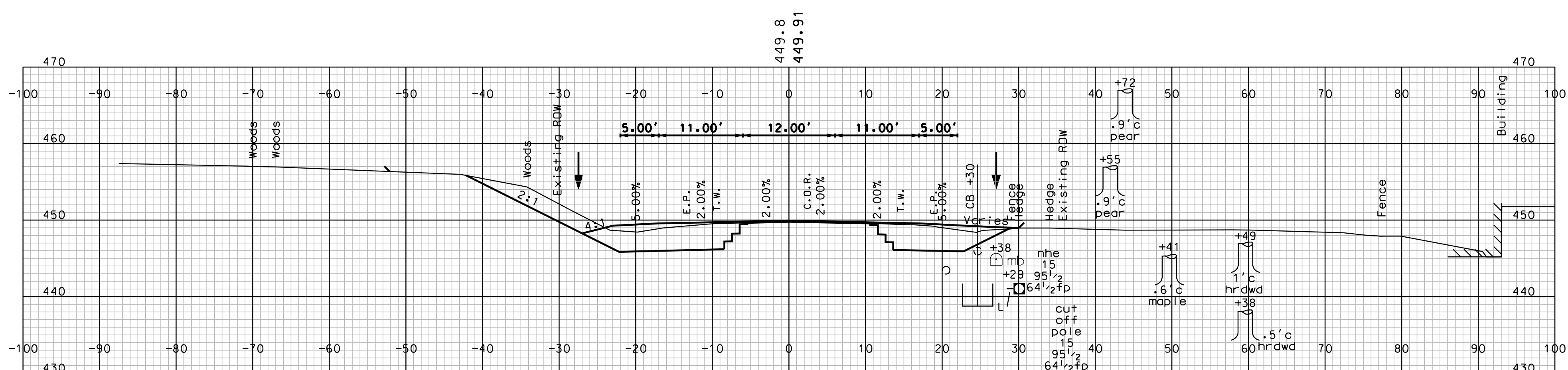
REVISIONS AFTER PROPOSAL				
NUMBER	DATE	STATION	STATION	DESCRIPTION



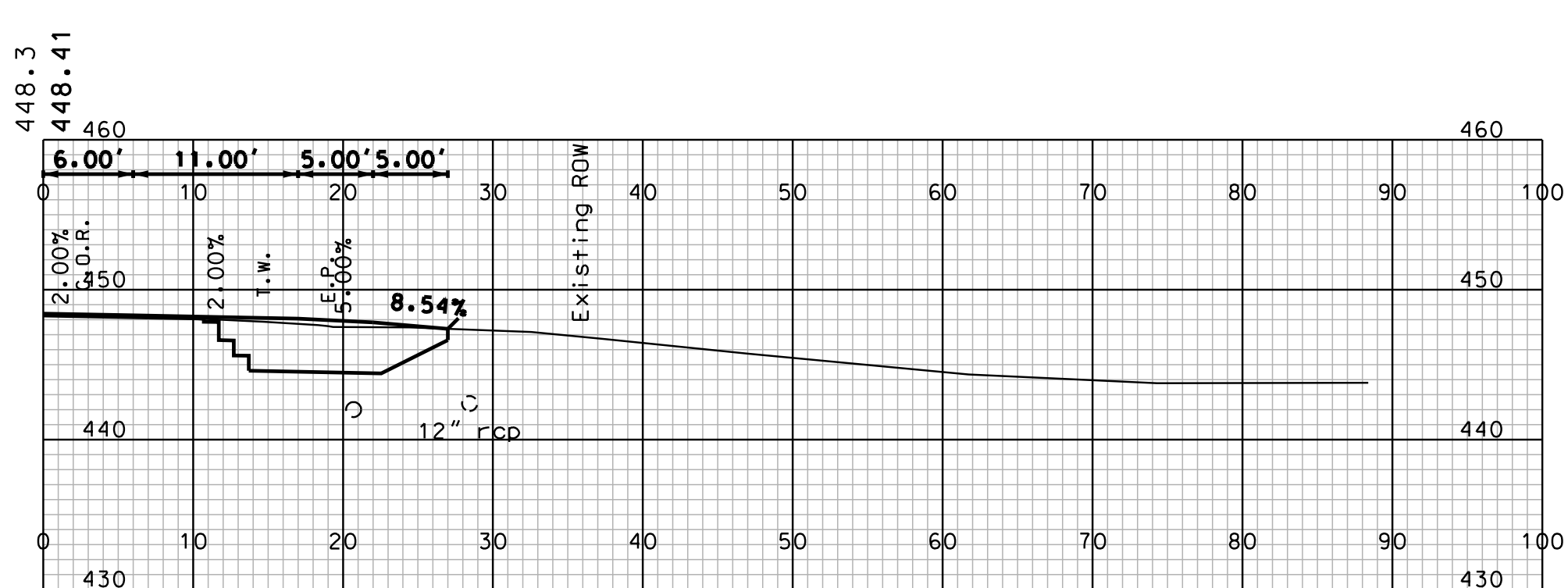
STA. 118+50



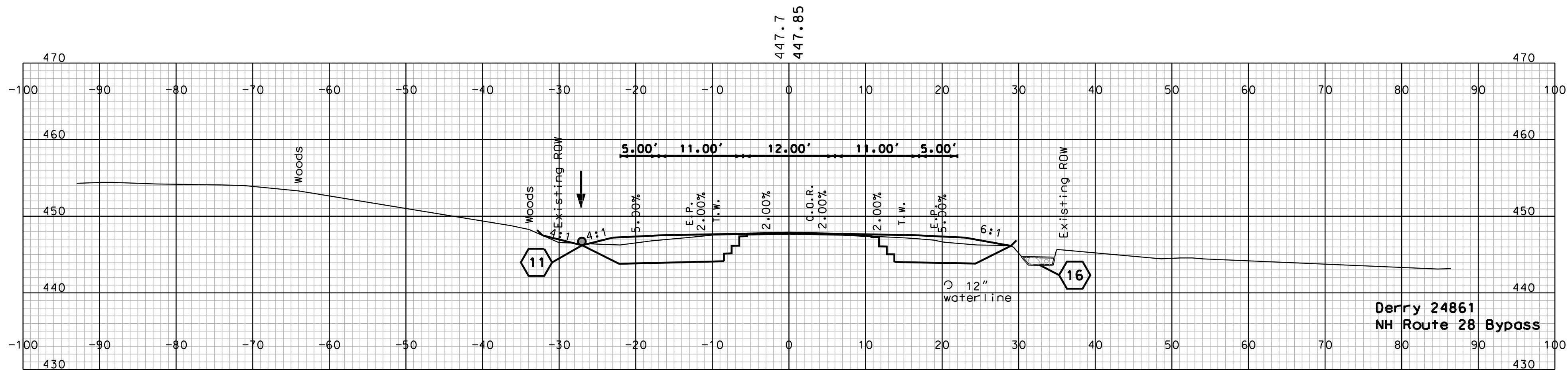
STA. 118+00



STA. 117+50



STA. 117+14
DRIVE RT



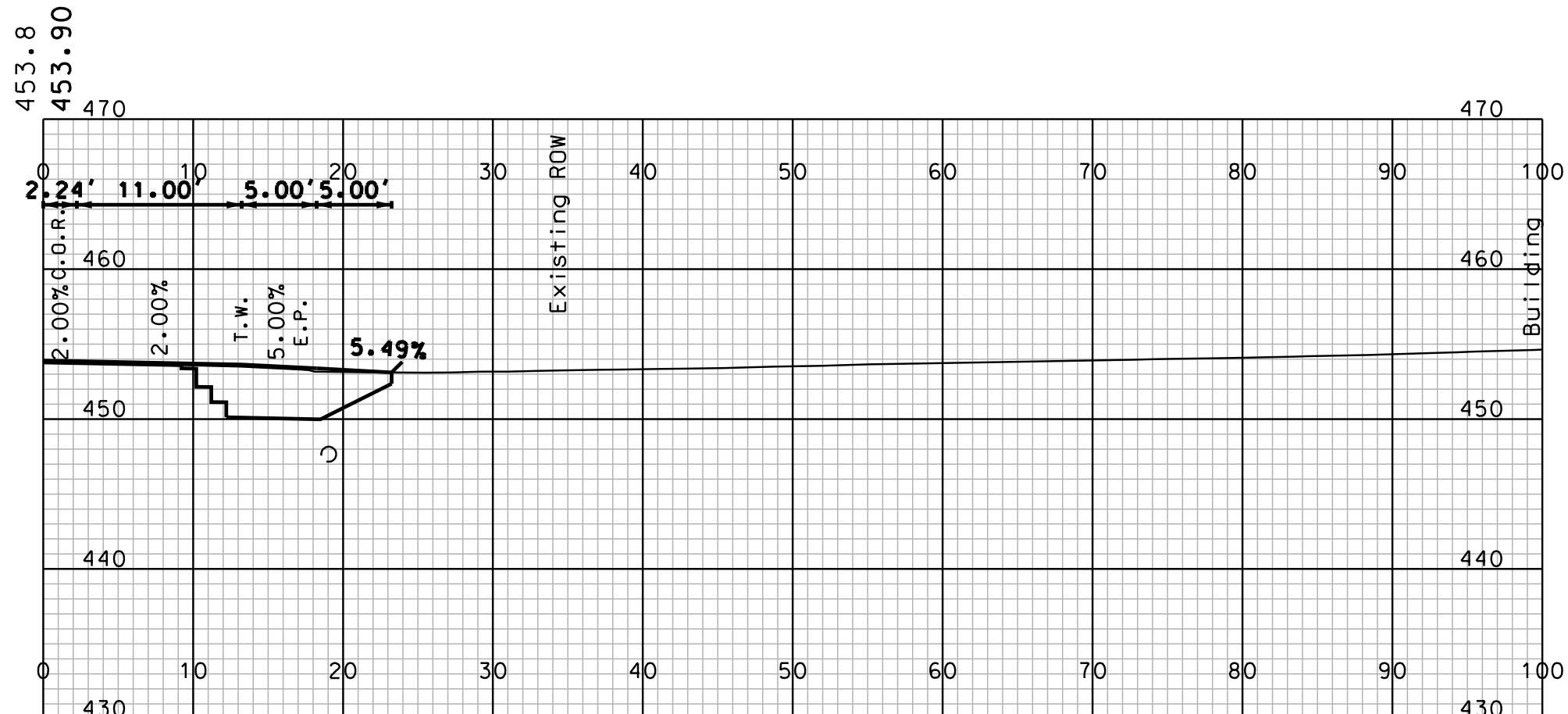
STA. 117+00

Derry 24861
NH Route 28 Bypass

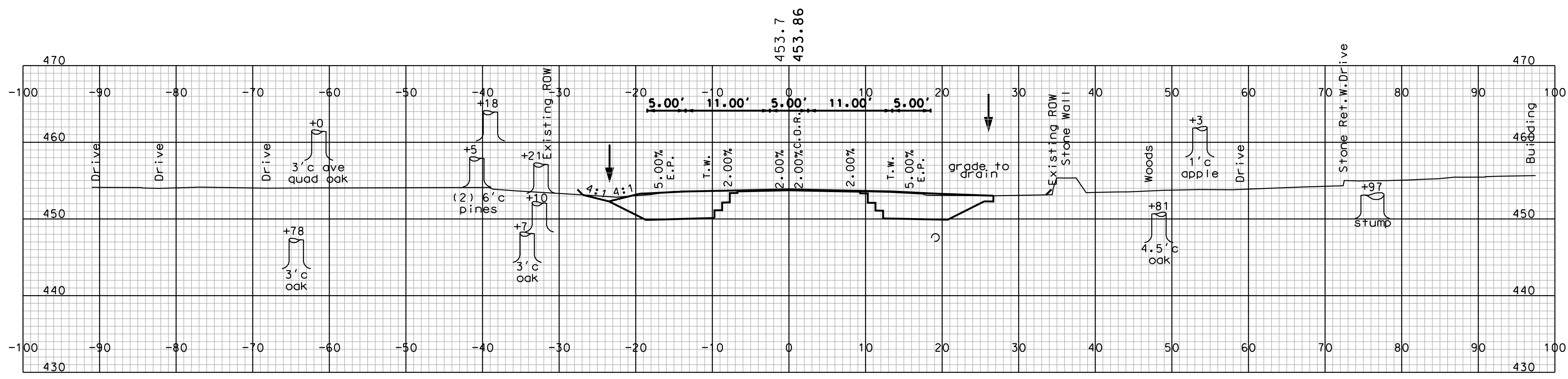
COMMON EXCAV.		SHEET TOTALS	
DCN	STATE PROJECT NO.	C.Y.	TOTAL SHEETS
24861_MC1M-XS	24861	935.4	46
		13.1	53

SDR PROCESSED	SEL	DATE	9/2013
NEW DESIGN	ENP	DATE	8/2018
SHEET CHECKED	TWC	DATE	8/2018
AS BUILT DETAILS		DATE	

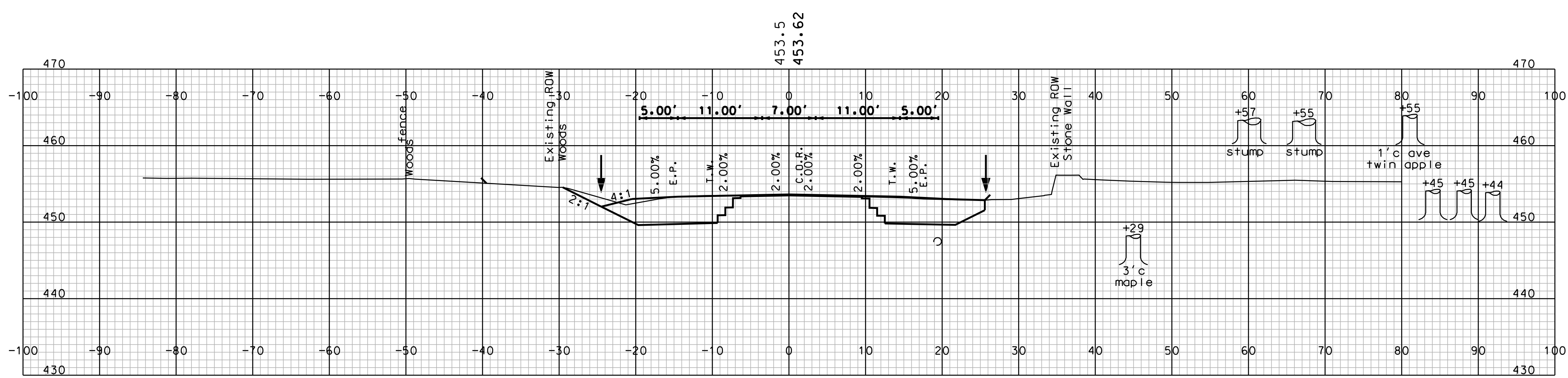
REVISIONS AFTER PROPOSAL				
NUMBER	DATE	STATION	STATION	DESCRIPTION



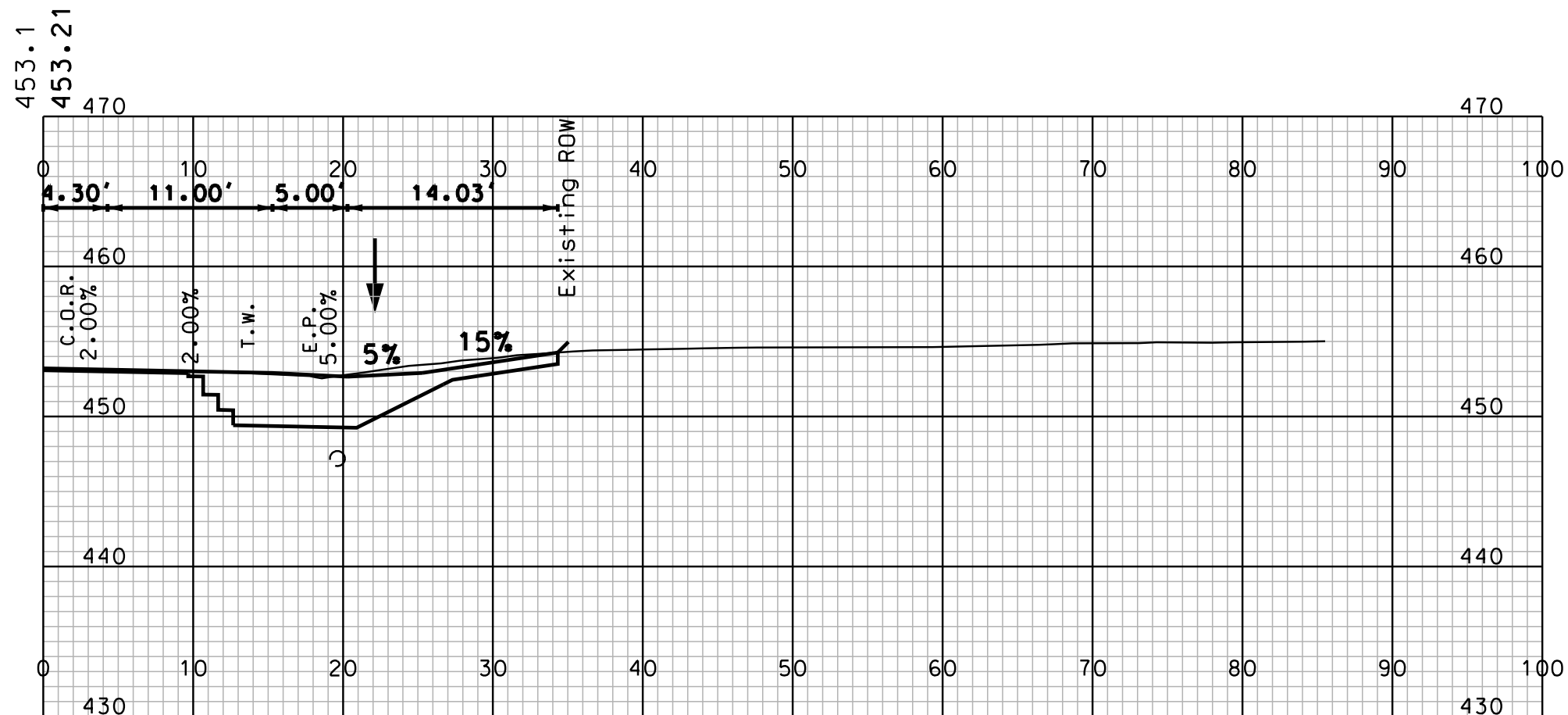
STA. 120+13
DRIVE RT



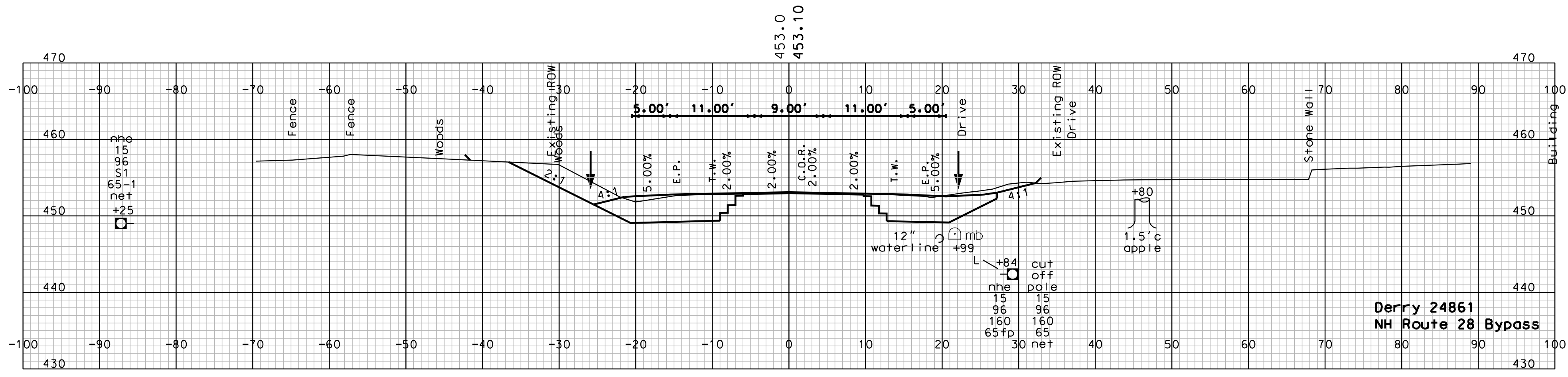
STA. 120+00



STA. 119+50



STA. 119+10
DRIVE RT



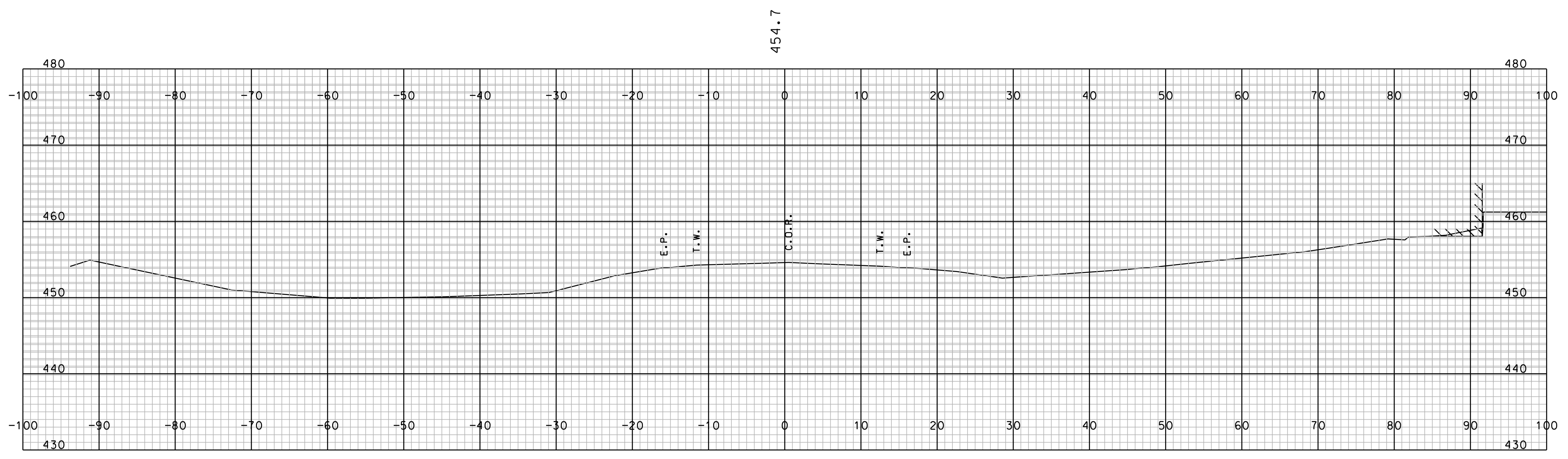
STA. 119+00

Derry 24861
NH Route 28 Bypass

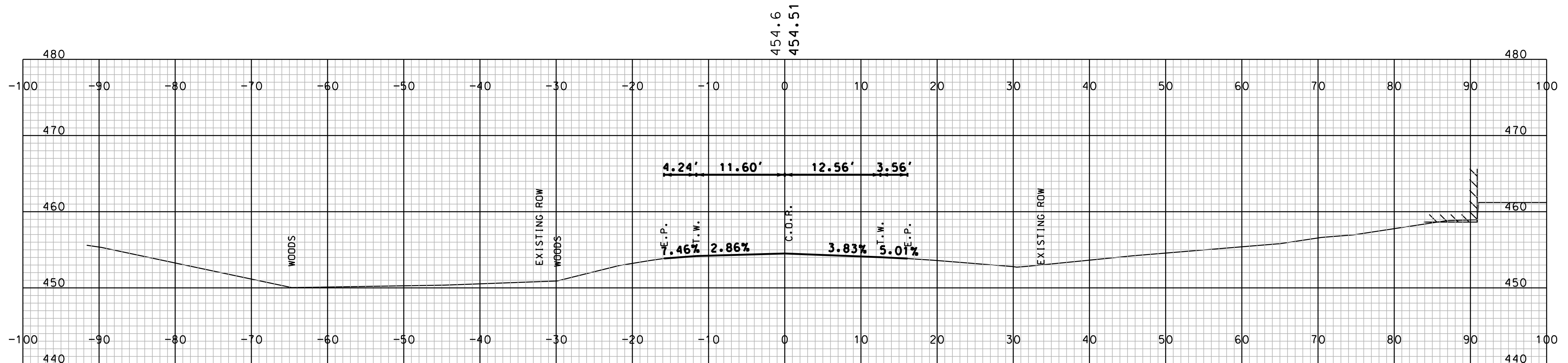
SHEET TOTALS					
COMMON EXCAV.	660	C.Y.	ROCK EXCAV.	-	C.Y.
FILL	-	C.Y.	MUCK EXCAV.	-	C.Y.
DGN	24861_MC1M-XS	STATE PROJECT NO.	24861	SHEET NO.	47
				TOTAL SHEETS	53

SDR PROCESSED	SEL	DATE	9/2013
NEW DESIGN	ENP	DATE	8/2018
SHEET CHECKED	TWC	DATE	8/2018
AS BUILT DETAILS		DATE	

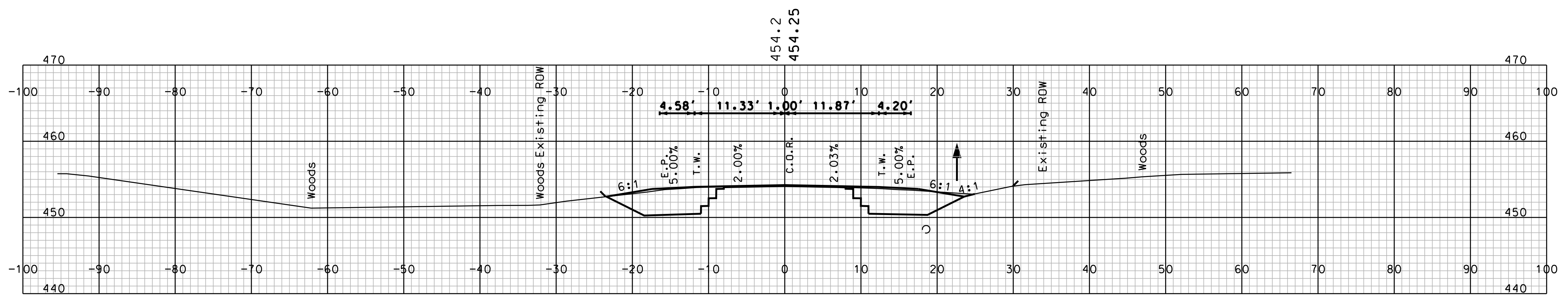
REVISIONS AFTER PROPOSAL				
NUMBER	DATE	STATION	STATION	DESCRIPTION



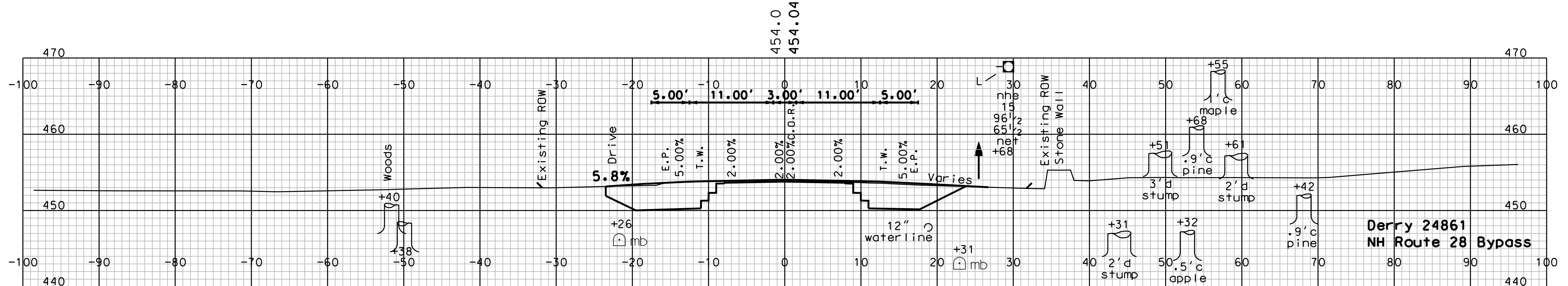
STA. 121+50



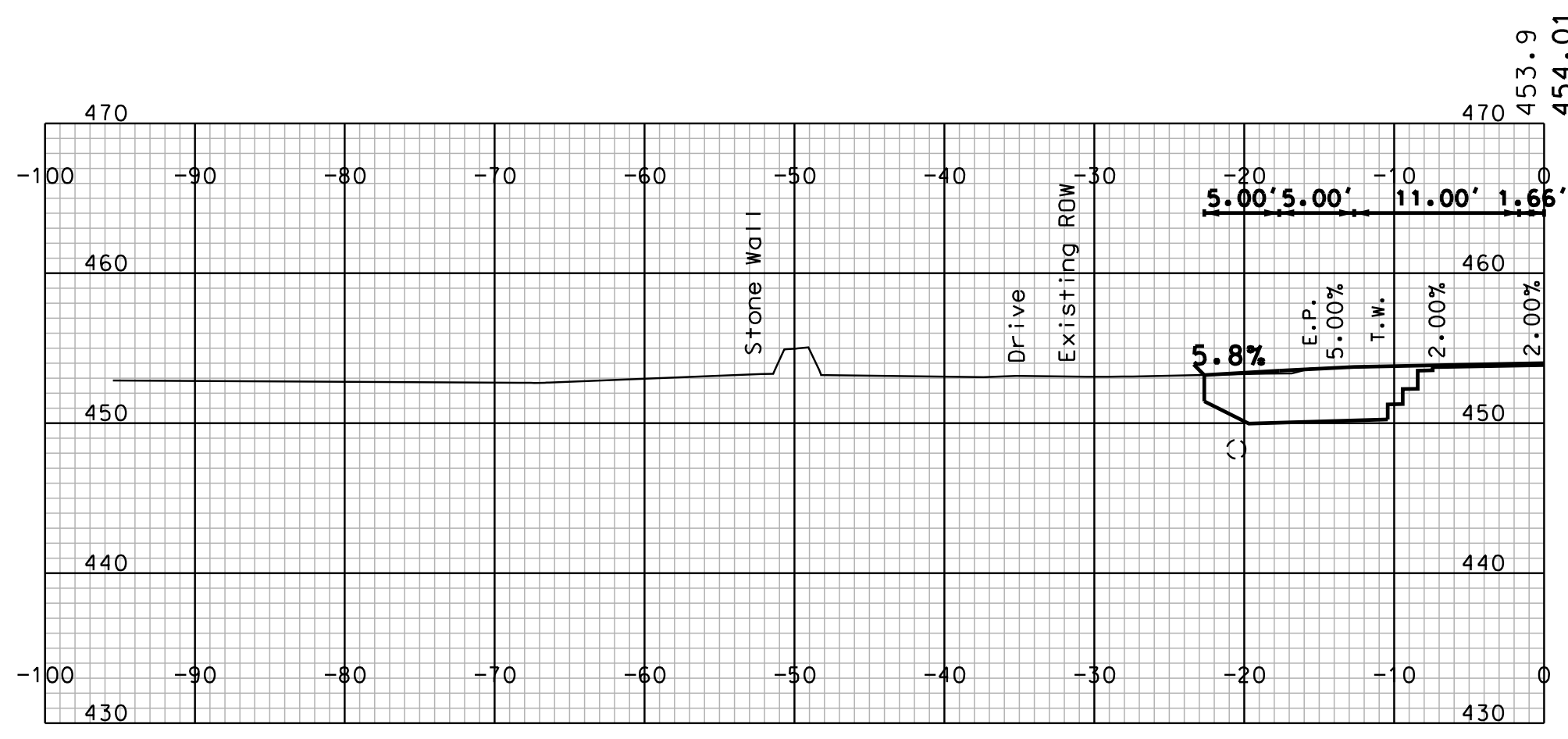
STA. 121+40



STA. 121+00



STA. 120+50

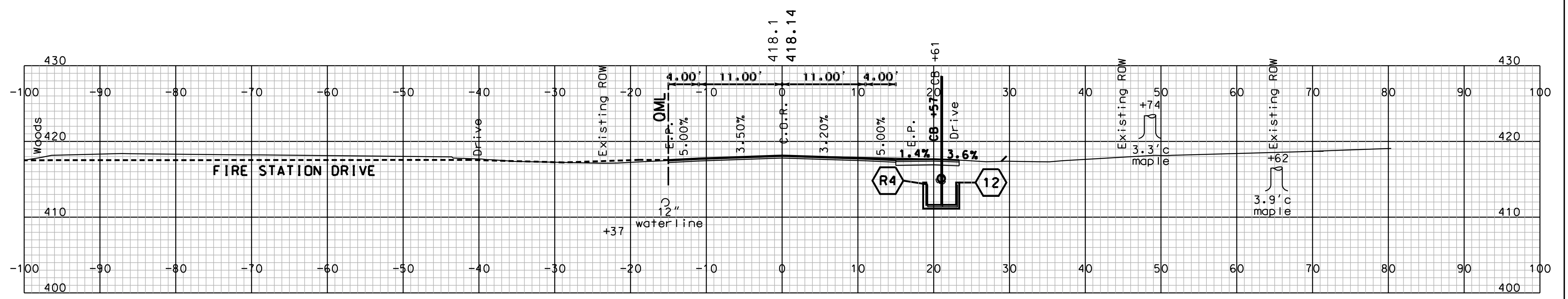


STA. 120+42
DRIVE LT

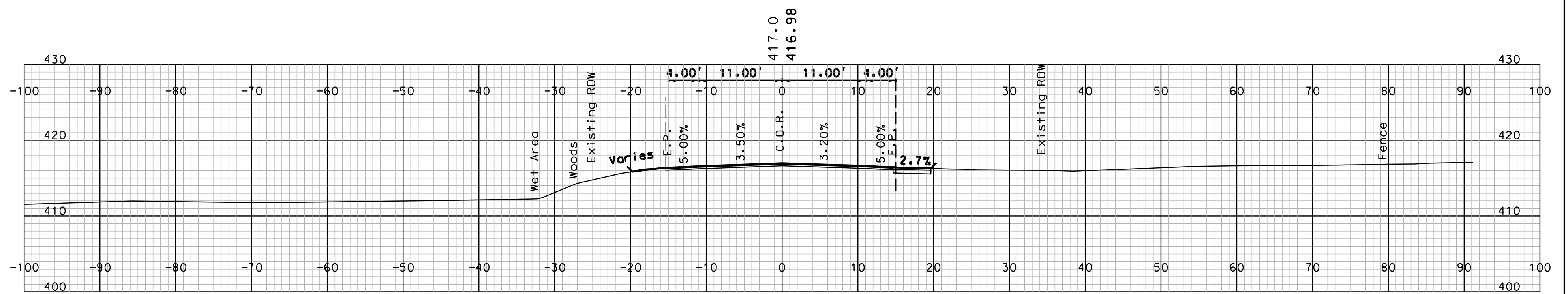
SHEET TOTALS					
COMMON EXCAV.	364.8	C.Y.	ROCK EXCAV.	-	C.Y.
FILL	0.2	C.Y.	MUCK EXCAV.	-	C.Y.
DGN	24861_MC1M-XS	STATE PROJECT NO.	24861	SHEET NO.	48
				TOTAL SHEETS	53

SDR PROCESSED	SEL	DATE	9/2013
NEW DESIGN	ENP	DATE	8/2018
SHEET CHECKED	TWC	DATE	8/2018
AS BUILT DETAILS		DATE	

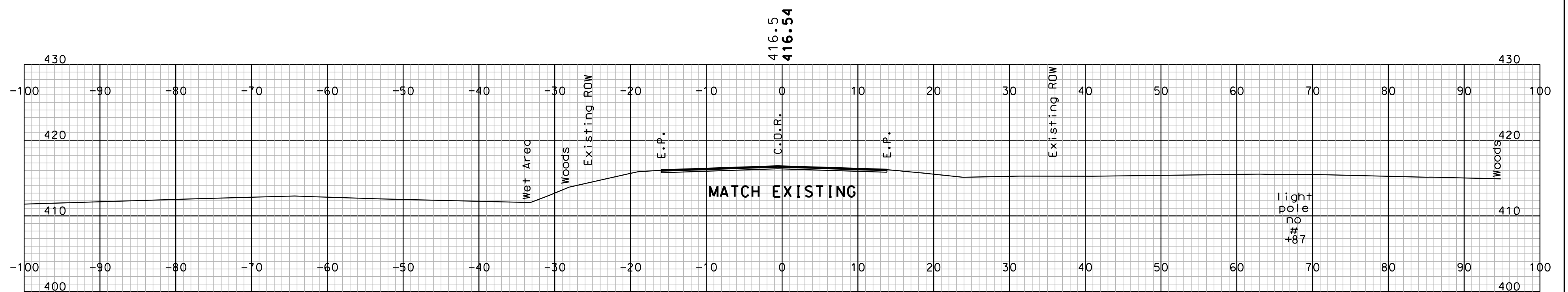
REVISIONS AFTER PROPOSAL				
NUMBER	DATE	STATION	STATION	DESCRIPTION



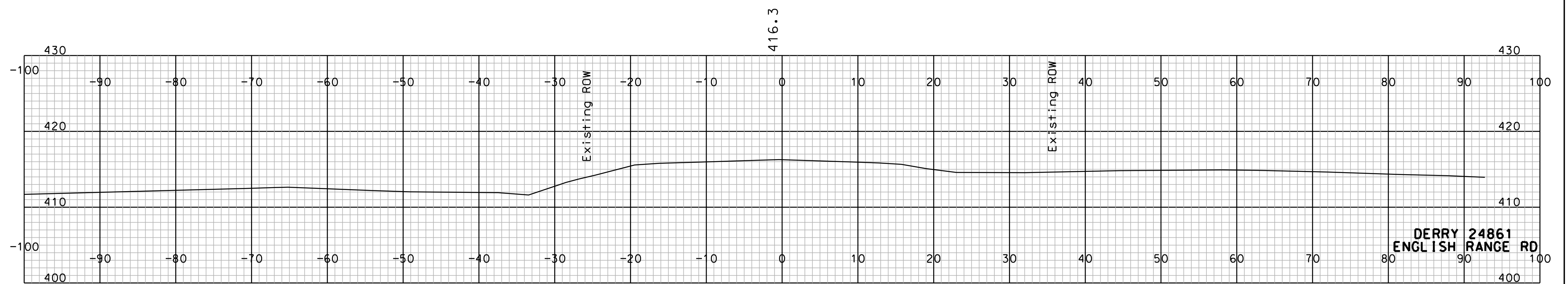
STA. 23+50



STA. 23+00



STA. 22+75

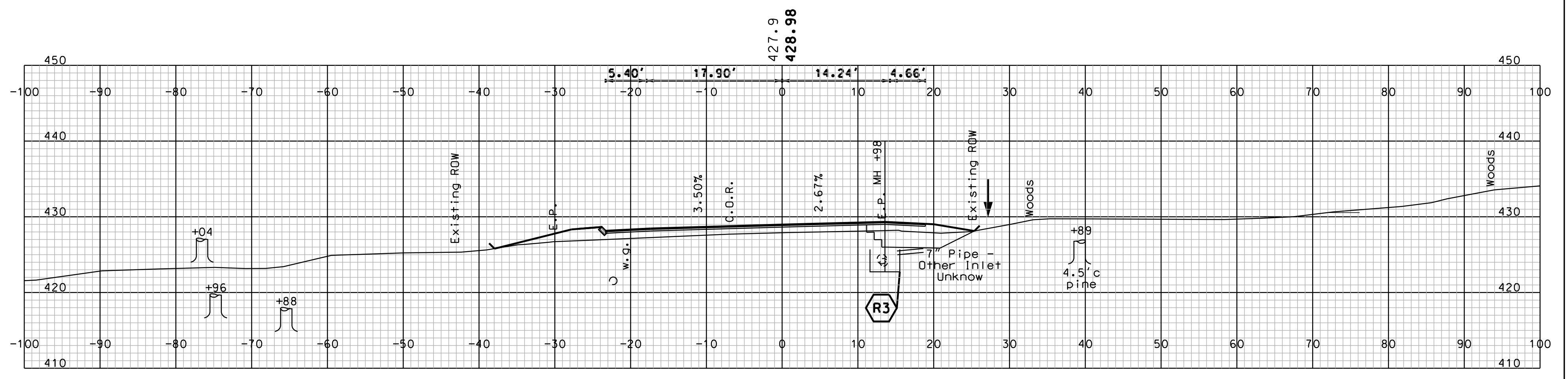


STA. 22+50

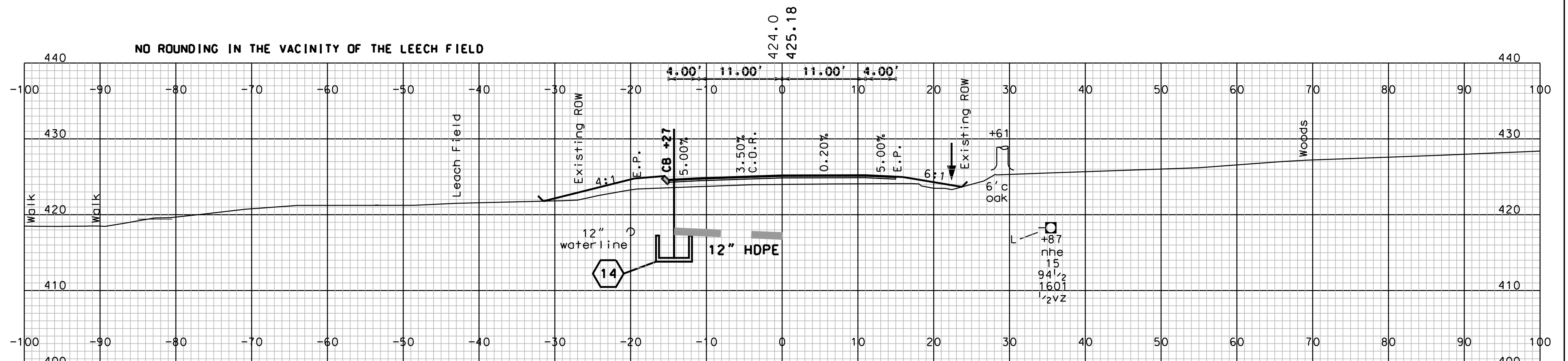
SHEET TOTALS					
COMMON EXCAV.	32.9	C.Y.	ROCK EXCAV.	-	C.Y.
FILL	-	C.Y.	MUCK EXCAV.	-	C.Y.
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS		
24861_MC3A_XS	24861	49	53		

SDR PROCESSED	SEL	DATE	9/2013
NEW DESIGN	ENP	DATE	8/2018
SHEET CHECKED	TWC	DATE	8/2018
AS BUILT DETAILS		DATE	

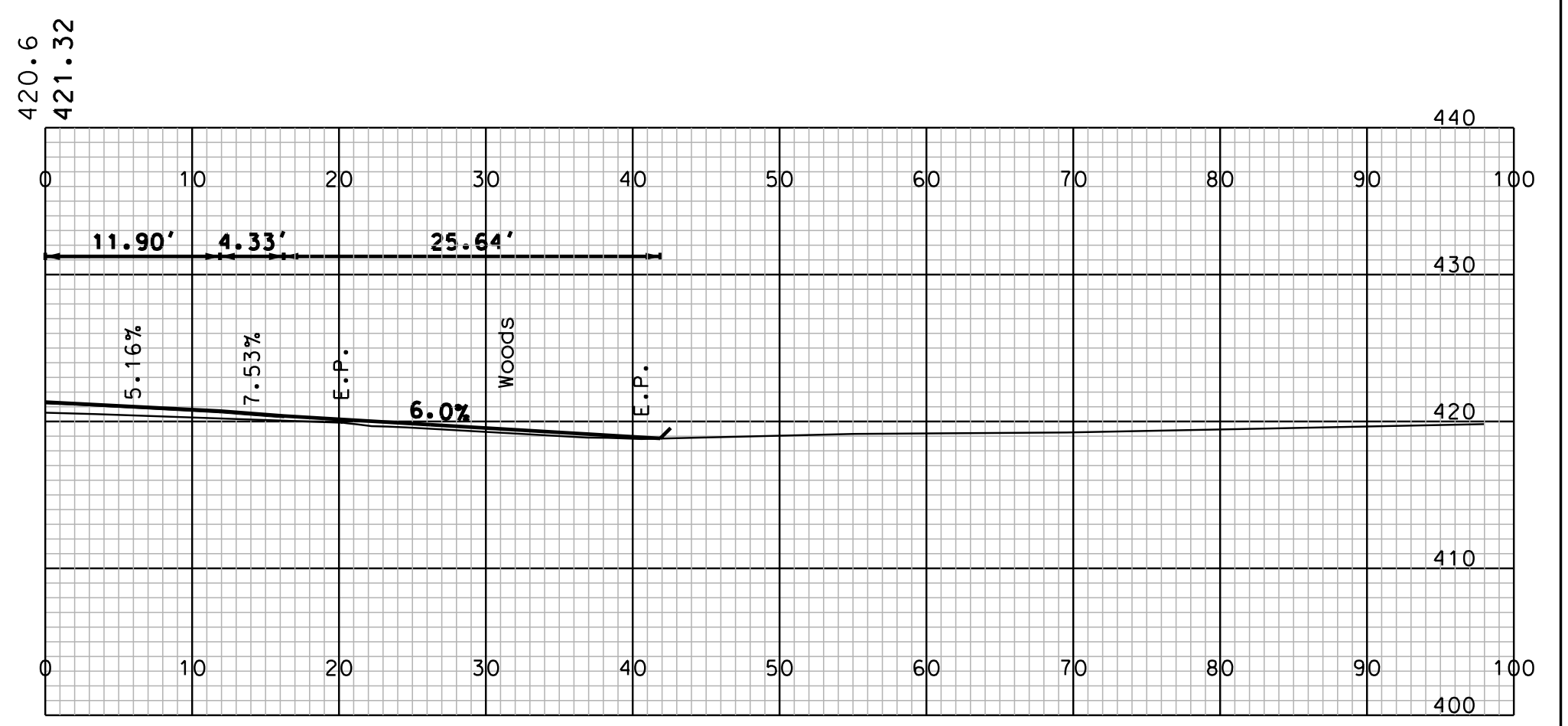
REVISIONS AFTER PROPOSAL				
NUMBER	DATE	STATION	STATION	DESCRIPTION



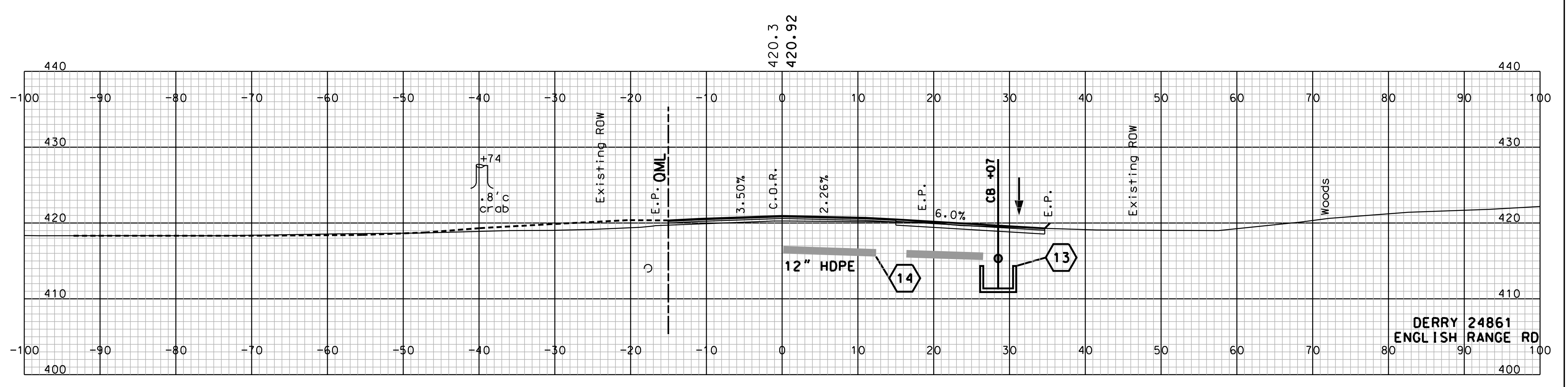
STA. 25+00
QUANTITY MATCH LINE



STA. 24+50



STA. 24+05
DRIVE RT (SKEWED)



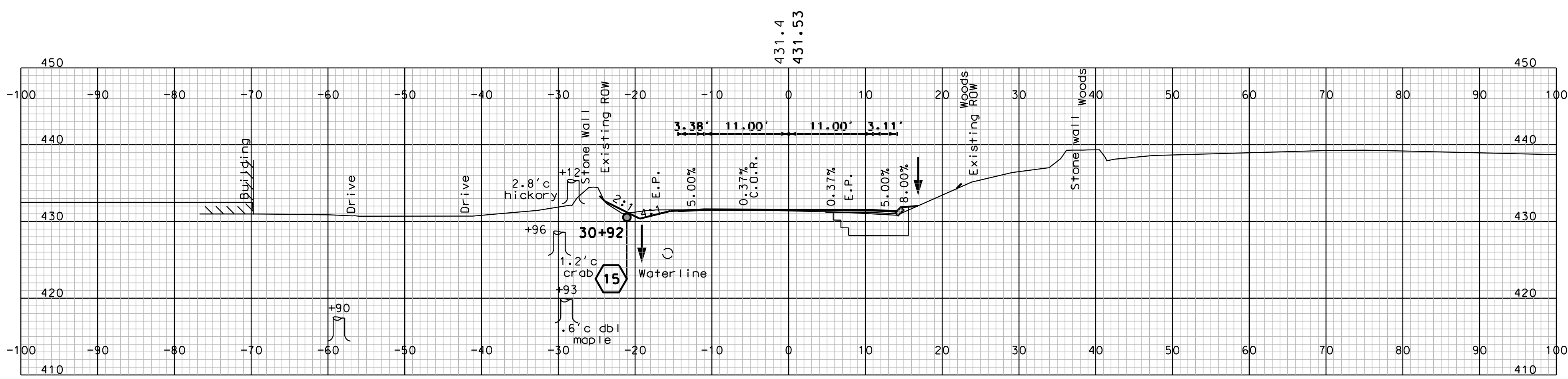
STA. 24+00

DERRY 24861
ENGLISH RANGE RD

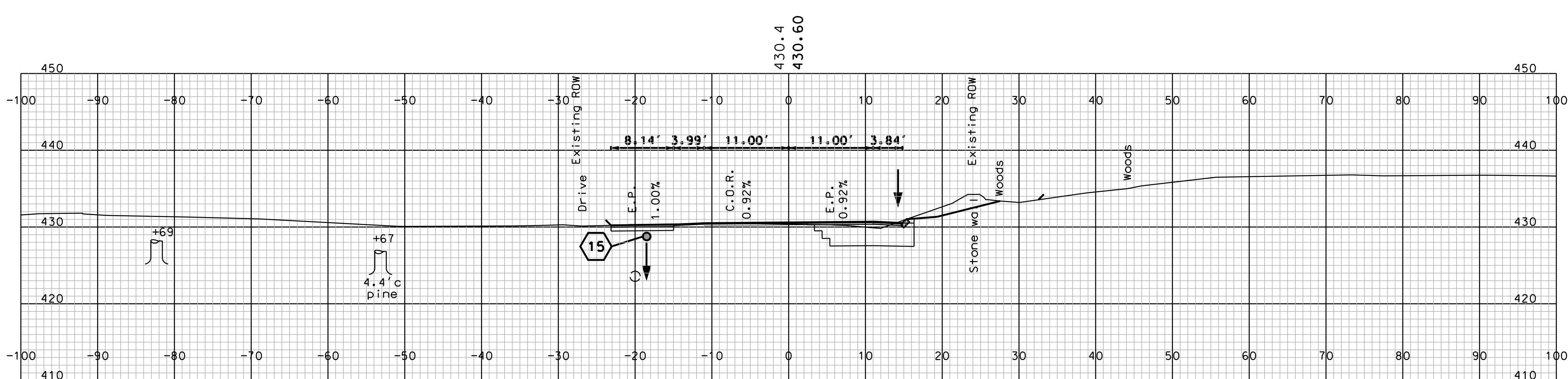
SHEET TOTALS					
COMMON EXCAV.	128.7	C.Y.	ROCK EXCAV.	-	C.Y.
FILL	53.7	C.Y.	MUCK EXCAV.	-	C.Y.
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS		
24861_MC3A_XS	24861	50	53		

SDR PROCESSED	SEL	DATE	9/2013
NEW DESIGN	ENP	DATE	8/2018
SHEET CHECKED	TWC	DATE	8/2018
AS BUILT DETAILS		DATE	

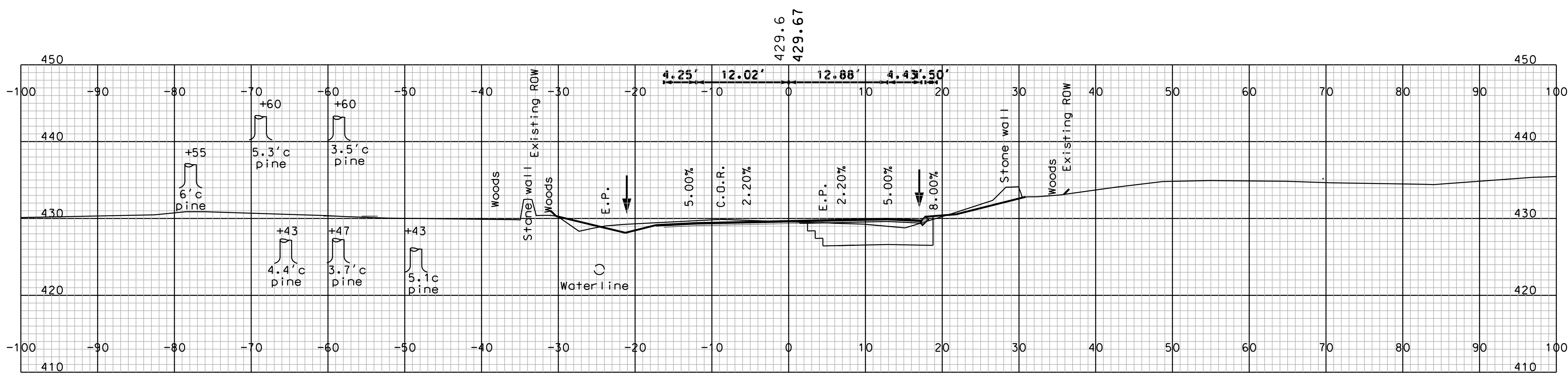
REVISIONS AFTER PROPOSAL				
NUMBER	DATE	STATION	STATION	DESCRIPTION



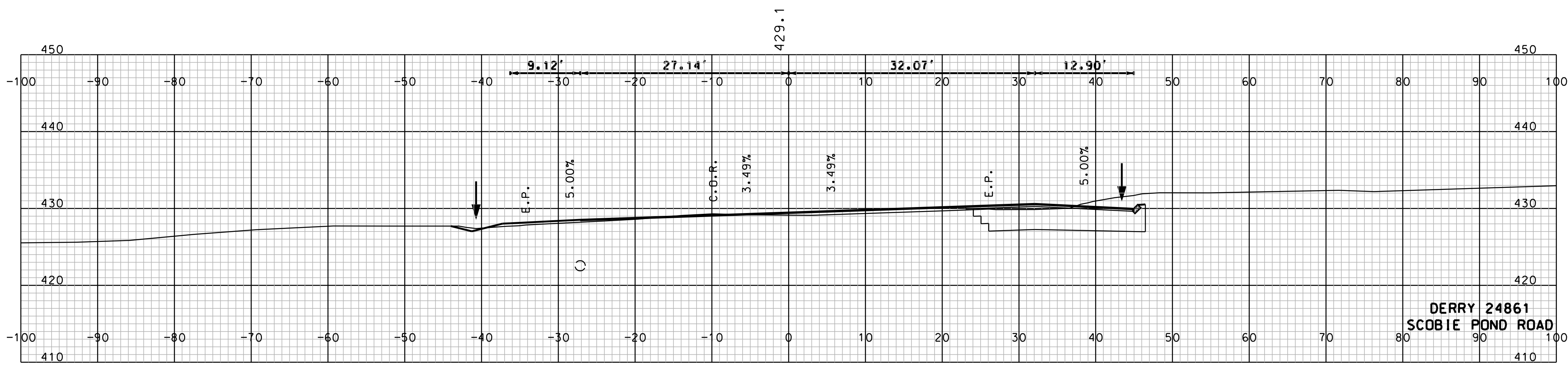
STA. 31+00



STA. 30+75



STA. 30+50
QUANTITY MATCH LINE



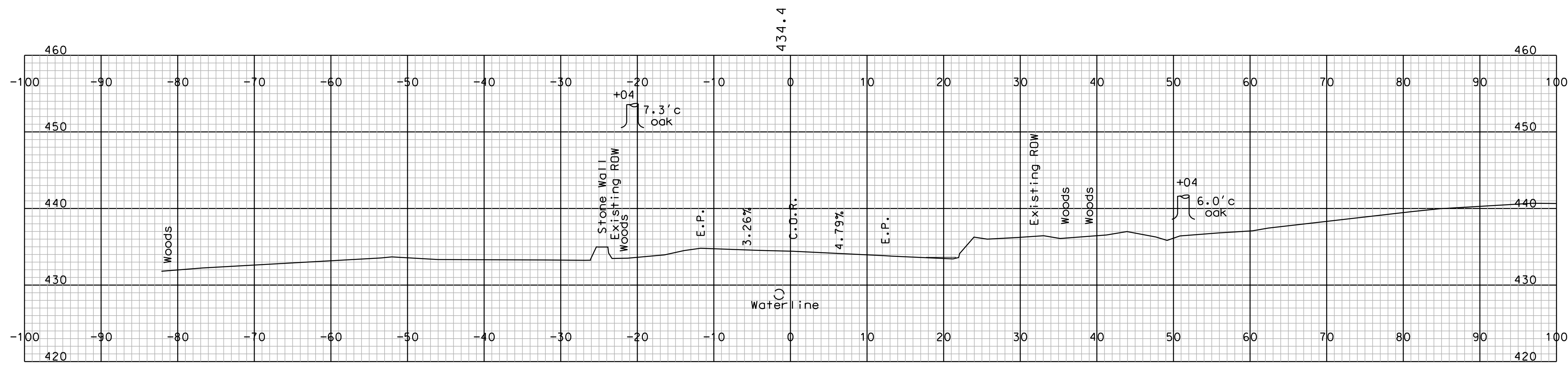
STA. 30+25

DERRY 24861
SCOBIE POND ROAD

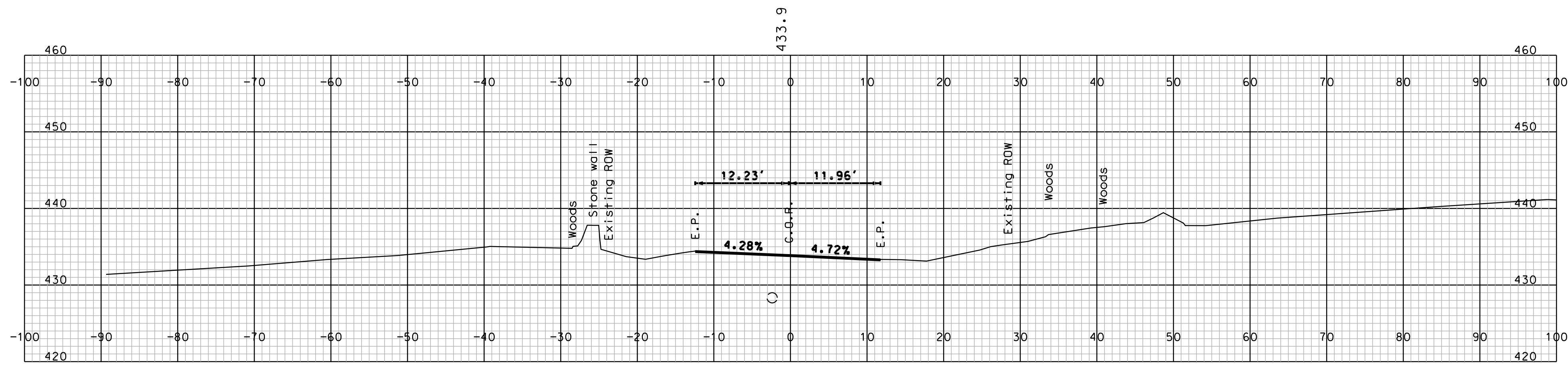
SHEET TOTALS					
COMMON EXCAV.	137.3	C.Y.	ROCK EXCAV.	-	C.Y.
FILL	4.1	C.Y.	MUCK EXCAV.	-	C.Y.
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS		
24861_MC2A_XS	24861	51	53		

SDR PROCESSED	SEL	DATE	9/2013
NEW DESIGN	ENP	DATE	8/2018
SHEET CHECKED	TWC	DATE	8/2018
AS BUILT DETAILS		DATE	

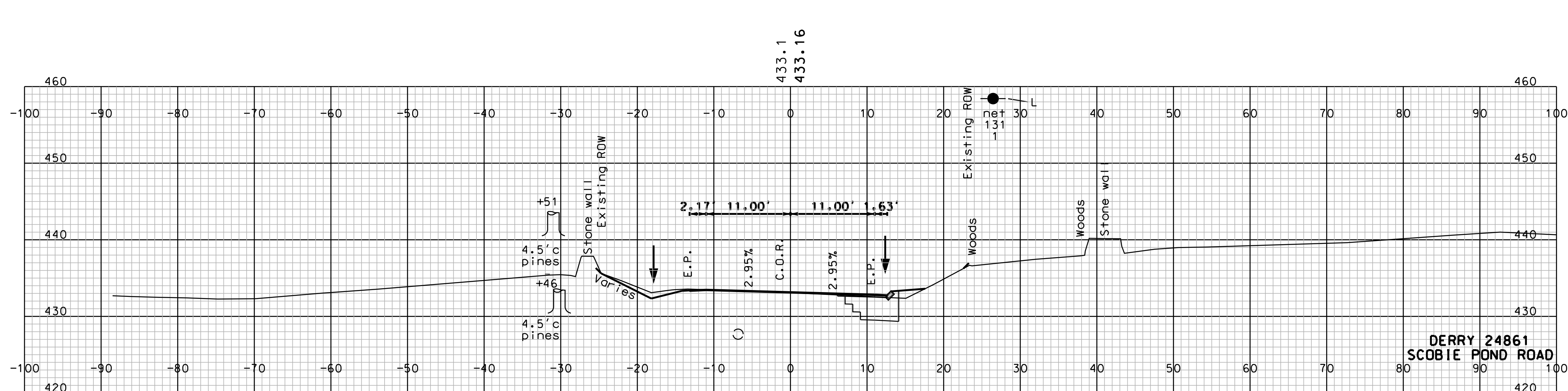
REVISIONS AFTER PROPOSAL				
NUMBER	DATE	STATION	STATION	DESCRIPTION



STA. 32+00



STA. 31+80



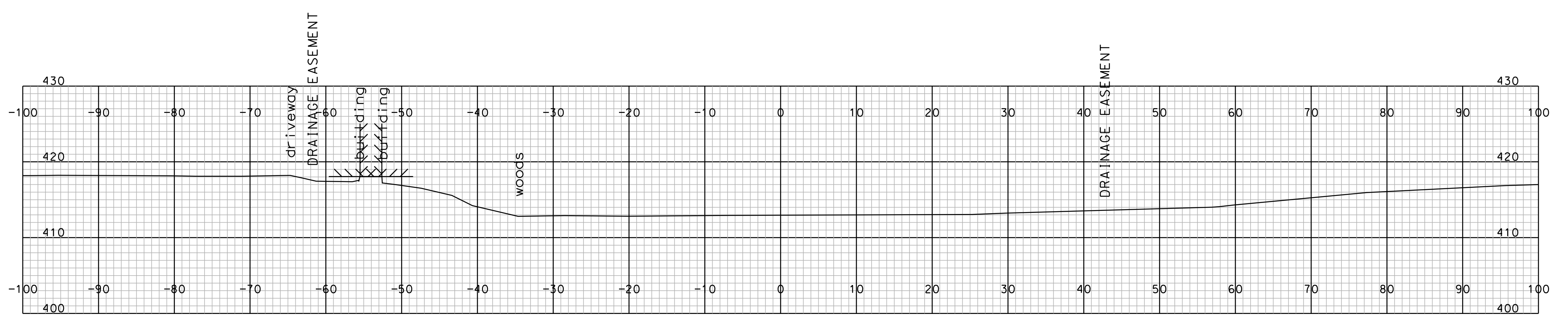
STA. 31+50

DERRY 24861
SCOBIE POND ROAD

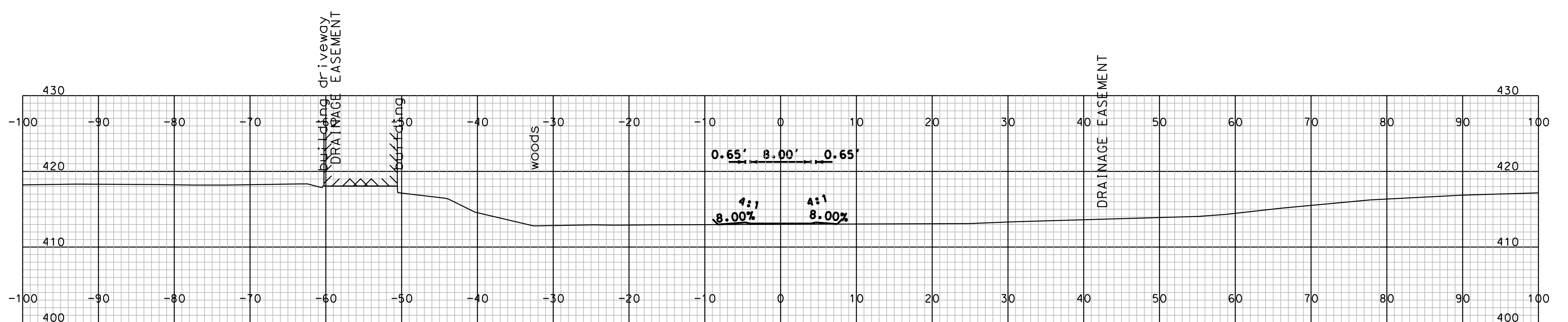
SHEET TOTALS					
COMMON EXCAV.	67.51	C.Y.	ROCK EXCAV.	-	C.Y.
FILL	4.4	C.Y.	MUCK EXCAV.	-	C.Y.
DGN	24861_MC2A_XS	STATE PROJECT NO.	24861	SHEET NO.	52
				TOTAL SHEETS	53

SDR PROCESSED	DATE
NEW DESIGN ENP	DATE 8/2018
SHEET CHECKED TWC	DATE 8/2018
AS BUILT DETAILS	DATE

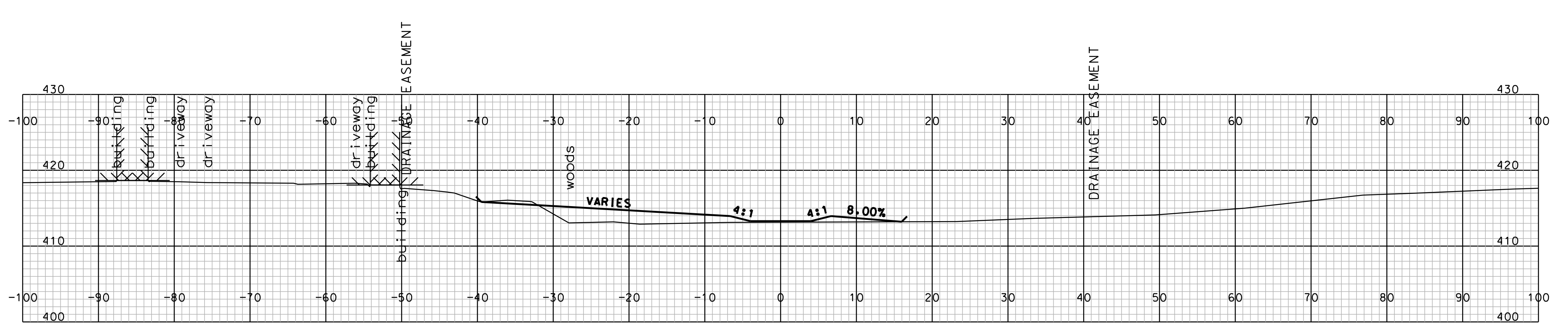
REVISIONS AFTER PROPOSAL				
NUMBER	DATE	STATION	STATION	DESCRIPTION



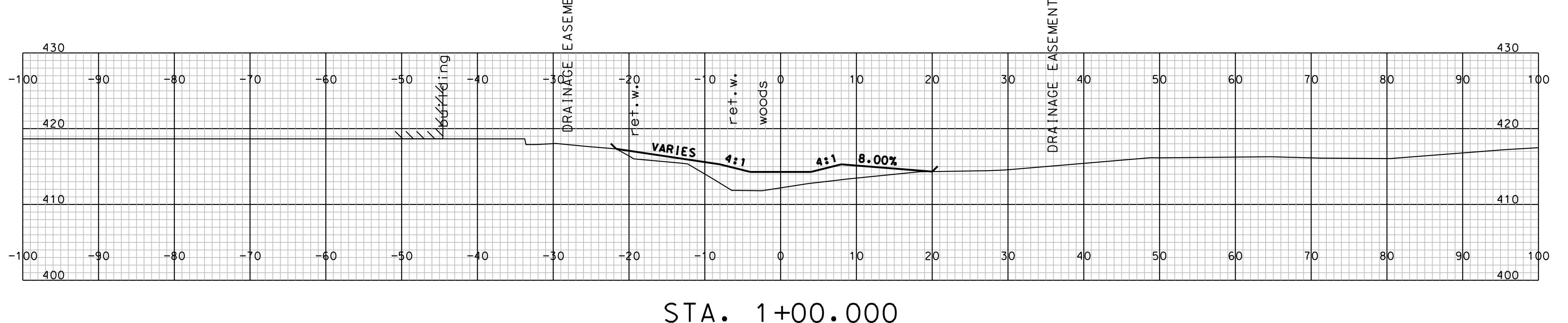
STA. 1+63.252



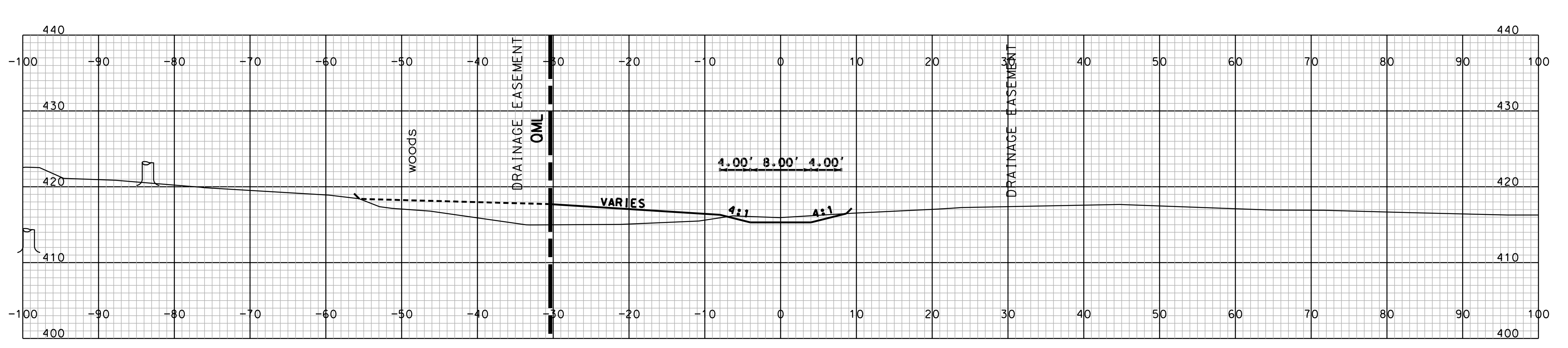
STA. 1+60.000



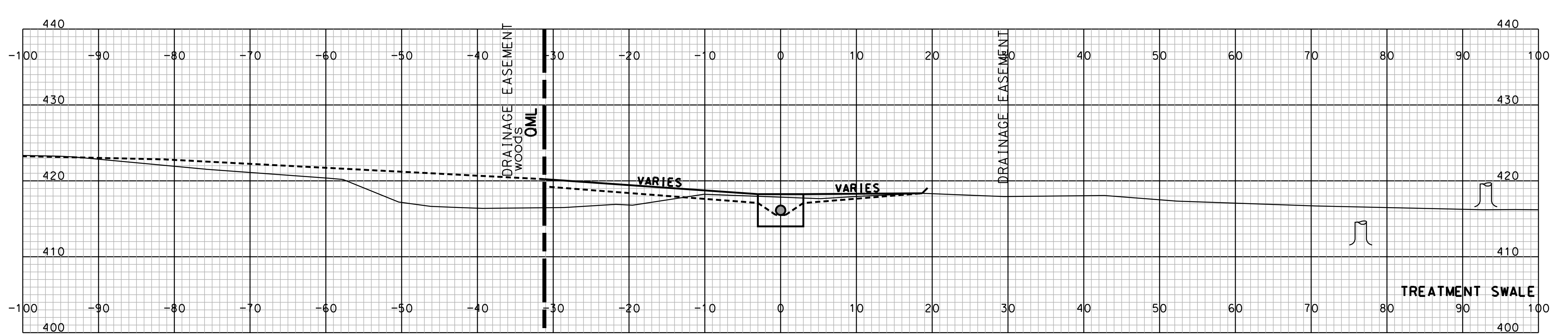
STA. 1+50.000



STA. 1+00.000



STA. 0+50.000



STA. 0+40.000

SHEET TOTALS					
COMMON EXCAV.	-	C.Y.	ROCK EXCAV.	-	C.Y.
FILL	482.81	C.Y.	MUCK EXCAV.	-	C.Y.
DGN	24861_MC1T_XS	STATE PROJECT NO.	24861	SHEET NO.	53
		TOTAL SHEETS	53		