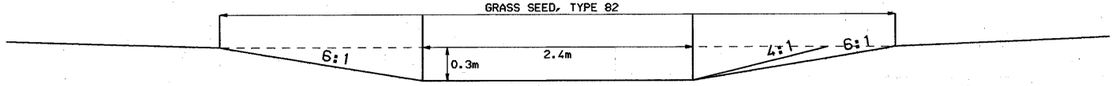
UNDERGROUND TELEPHONE
CONDUIT LINE AS
FOUND IN FIELD

MITIGATION CONSTRUCTION LINE
45.0m OFFSET FROM SB OFF RAMP
(EXIT 3B) ALIGNMENT

MITIGATION AREA
CONSTRUCTION LINE

DITCH AREA

DRAINAGE DITCH (DR. NOTE 20)
ITEM 644.82 SALT-TOLERANT
GRASS SEED, TYPE 82



REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION

NOTEBOOKS

	BOOK	PAGE
	BOOK	PAGE
	BOOK	PAGE

		DATE
EXISTING DETAIL		
PROPOSED DESIGN	A. KING	DATE 8/98
SHEET CHECKED	J. KIROUAC	DATE 8/98
AS BUILT DETAILS		DATE

WETLAND MITIGA
CONTOURING PL

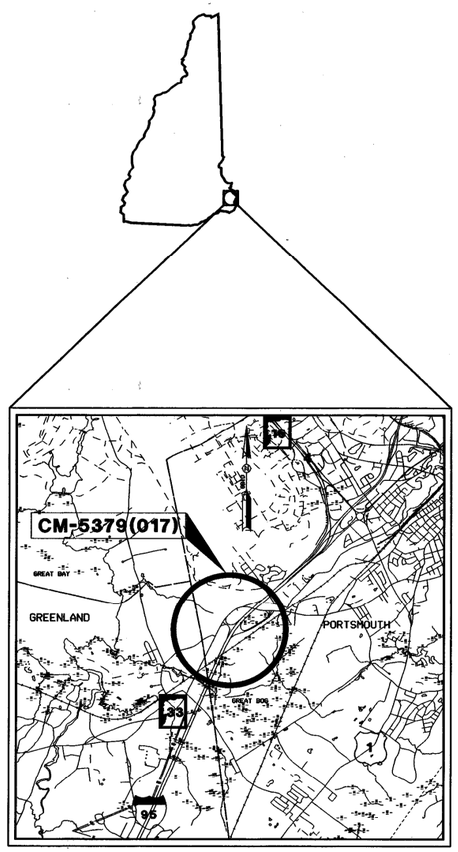
WINDOW NAME	MULTIPLOT NAME	.FGB NAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	TOTAL SHEETS
MITIGATE	MITIGATE_CONTOUR	PROP_DR	CM-5379(017)	12250	282

THE STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION

CONSTRUCTION PLANS
OF PROPOSED FEDERAL AID PROJECT

CM-5379(017)
N.H. PROJECT NO. 12250
PORTSMOUTH TRANSPORTATION CENTER

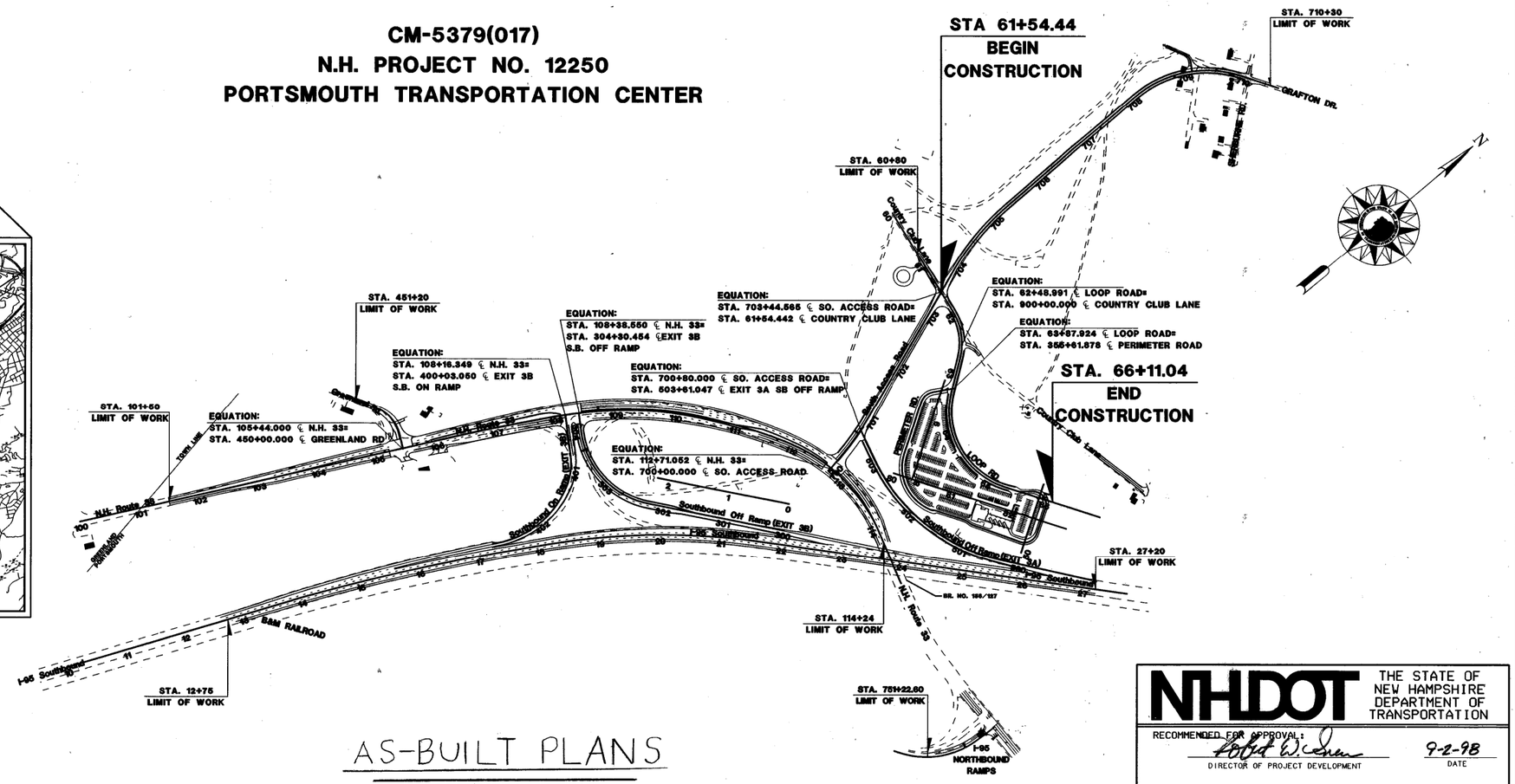
DESIGN DATA	NH RTE 33
AVERAGE DAILY TRAFFIC 19 98	26490
AVERAGE DAILY TRAFFIC 20 18	41560
PERCENT OF TRUCKS	10
DESIGN SPEED	60 km/hr
LENGTH OF PROJECT	456.60 m



LOCATION MAP

2 1 0 1 2 3 km

GRAPHIC SCALE: 1:50 000



AS-BUILT PLANS

FEBRUARY 28, 2002

TOWN OF PORTSMOUTH
COUNTY OF ROCKINGHAM
SCALE 1 : 4000

METRIC

DRAWN BY	J. HEBERT	DATE 6/04/98
CHECKED BY	J. L. KIROUAC	DATE 8/27/98

CRAIG A. GREEN NO. 5809 REGISTERED PROFESSIONAL ENGINEER

NHDOT THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION

RECOMMENDED FOR APPROVAL:
Robert W. Scott — DIRECTOR OF PROJECT DEVELOPMENT — 9-2-98 DATE

APPROVED: Carol A. Murray — ASSISTANT COMMISSIONER — 9/2/98 DATE

U. S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED: _____ DIVISION ADMINISTRATOR _____ DATE

FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
CM-5379(017)	12250	1	282

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	TITLE PAGE
2	INDEX OF SHEETS & GENERAL NOTES
3	INDEX OF STANDARD PLANS
4	STANDARD SYMBOLS
5-17	TYPICAL SECTIONS OF IMPROVEMENT
18-23	SUMMARY OF QUANTITIES
	SPECIAL USE PLANS
24	CONSTRUCTION ACCESS ROUTE THROUGH P.D.A.
25	RUNWAY PROTECTION ZONES
26	RUNWAY PROTECTION ZONES PROFILE AND SECTION VIEWS
27	SWALE DETAILS
28	RAMP NOSE DETAILS
29	BRIDGE APPROACH RAIL (N.H. RTE 33) DETAIL
30	THRIE-BEAM TO CONCRETE BARRIER DETAILS
31	MISCELLANEOUS DETAIL SHEET
32	MISCELLANEOUS DETAIL SHEET
33	MISCELLANEOUS DETAIL SHEET
34	DRIVEWAYS
35	WORDS & SYMBOLS
36	TOLERANCES FOR PAVEMENT MARKING LINES
37	PAVEMENT MARKING AT MINOR INTERSECTIONS
38	PAINTED ISLAND DETAILS
39	PORTABLE CONCRETE BARRIER
40	PAVEMENT MARKING AT ENTRANCE & EXIT RAMPS
41	SPEED ZONE PAVEMENT MARKING DETAILS
42	MAILBOX ASSEMBLY DETAIL
43-44	LANDSCAPING DETAILS
	ROADWAY PLANS
45-60	GENERAL PLANS
61-77	PROFILE PLANS
78-90	SIGNING, CURBING, PAVEMENT LAYOUT & MARKING PLANS
91-101	DRAINAGE, GUARD RAIL, AND FENCING PLANS
102	CONTOUR AND LANDSCAPING PLAN (PARKING LOT AND DETENTION POND)
103-113	UTILITY PLANS
	SIGNALIZATION PLANS
114-118	SIGNAL PLANS
119	TRAFFIC SIGNAL MAST ARM FOUNDATION - TYPE 2
120-121	LOOP DETECTOR DETAILS
122-123	UTILITY AND TRAFFIC SIGNAL EQUIPMENT DETAILS
	SIGN PLANS
124-125	SIGN LOCATION SHEETS
126-131	SIGN TEXT SHEETS
132-133	OVERHEAD SIGN STRUCTURE DETAILS
134-145	SIGN DETAILS
	SEWER AND WATER PLANS
146-153	WATERLINE RELOCATION PLANS
154-155	PROPOSED SEWER PLANS
	WETLAND MITIGATION PLANS
156	WETLAND CONTOUR PLANS
157	LANDSCAPING PLAN
158-161	WETLAND CROSS SECTIONS
	CROSS SECTIONS
162-176	N.H. RTE 33
177-193	SOUTH ACCESS ROAD
194-209	PARKING LOT
210-217	I-95
218-230	RAMPS
231-235	COUNTRY CLUB LANE/PARKING LOT ACCESS
236	GREENLAND ROAD
237-282	BUILDING SHEETS

GENERAL NOTES

(1) THIS PROJECT TO BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS DATED 1997 AND SUPPLEMENTAL SPECIFICATIONS, CURRENT STANDARD SHEETS AND SPECIAL PROVISIONS ATTACHED TO THE PROPOSAL.

(2) ADJUSTING, ALTERING OR RELOCATING THE PROPERTY OF ANY PUBLIC UTILITY SHALL BE DONE BY THE OWNER, NOT A PART OF THIS CONTRACT. THE CONTRACTOR SHALL COOPERATE WITH THE OWNER IN THE PERFORMANCE OF THE WORK.

(3) 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.

(4) ALL EXISTING UTILITY POLES WILL BE RELOCATED BY OTHERS TO A MINIMUM OF ___ FEET FROM THE ROADWAY CENTERLINE.

(5) THE LOCATION OF EXISTING UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE. THE EXACT LOCATION SHOULD BE ESTABLISHED IN THE FIELD BY THE UTILITY COMPANY PRIOR TO ANY EXCAVATION OR POST DRIVING.

(6) DRIVES SHALL BE REPLACED IN KIND EXCEPT AT THOSE LOCATIONS WHERE DRIVES HAVE BEEN STEEPENED TO THE EXTENT THAT A MORE STABLE SURFACE IS WARRANTED. ALL GRAVEL DRIVES TO RESIDENCES AND OTHER GRAVEL DRIVES WHEN ORDERED, SHALL BE CONSTRUCTED WITH A PAVED APRON ADJACENT TO THE SHOULDER.

(7) TOPSOIL SHALL BE REMOVED FOR ITS TOTAL DEPTH WITHIN THE LIMITS OF THE SLOPE LINES. UNLESS OTHERWISE DIRECTED, THE TOPSOIL SHALL BE STOCKPILED AND USED IN ITS ENTIRETY UNDER SECTION 641 - LOAM AND/OR SECTION 647 - HUMUS.

(8) UNSUITABLE MATERIAL, ROOTS AND STUMPS WITHIN THE LIMITS OF THE ROAD BED, SHALL BE REMOVED AS ORDERED.

(9) MUCK SHALL BE REMOVED BY EXCAVATION UNDER ITEM (203.4), OR BY DISPLACEMENT, AS ORDERED.

(10) THE SUBGRADE SHALL BE SCARIFIED TO ASSURE THAT ALL BOULDERS AND COBBLES OVER 6 INCHES ARE REMOVED WITHIN 36 INCHES OF FINISHED GRADE. THIS WORK AND RECOMPACTION OF THE SUBGRADE WILL BE PAID UNDER ITEM 212.1 - SCARIFYING.

(11) EXISTING LEDGE AND BOULDER OUTCROPS ARE TO BE REMOVED AND/OR BERMED AS SHOWN OR AS ORDERED.

(12) HUMUS SHALL BE APPLIED TO ALL EARTH SLOPES NOT LOAMED TO A NOMINAL DEPTH OF 3½ INCHES (471 C.Y./ACRE), UNLESS OTHERWISE ORDERED.

(13) ALL NEW EARTH SLOPES SHALL BE MULCHED.

(14) THE SLOPES AROUND EXTENDED PIPES SHALL BE FLATTENED AND GRADED AS SHOWN OR ORDERED.

(15) ASPHALT SURFACE TREATMENT INCLUDING SAND COVER SHALL BE APPLIED TO THE TRAVELED WAY AS A PRIME COAT AT THE RATE OF 0.50 GALLONS PER SQUARE YARD IN ONE APPLICATION, OR AS ORDERED.

(16) ASPHALT SURFACE TREATMENT INCLUDING SAND COVER SHALL BE APPLIED TO THE SHOULDER AS A PRIME COAT AT THE RATE OF 0.50 GALLONS PER SQUARE YARD IN ONE APPLICATION, OR AS ORDERED.

(17) THE PAVEMENT OVERLAY SHALL BE WARPED TO MATCH EXISTING CATCH BASINS, DROP INLETS, AND /OR SIMILAR STRUCTURES.

(18) EXISTING CONCRETE PAVEMENT REMOVAL WILL BE PAID UNDER ITEM 203.2 - ROCK EXCAVATION (___ C.Y./100 L.F.). THE BITUMINOUS PAVEMENT ABOVE THE CONCRETE WILL NOT BE PAID UNDER ITEM 203.2.

(19) RESTORE SUPERELEVATION ON EXISTING CURVES BY THE USE OF A PAVEMENT LEVELING COURSE AS INDICATED ON PLANS OR AS ORDERED.

(20) ALL CRACKS IN THE PAVEMENT MEASURING ¼ INCH OR MORE IN WIDTH, OR AS ORDERED, SHALL BE TREATED WITH CRACK FILLER WITHIN THE LIMITS DESIGNATED ON THE PLANS.

(21) ADJUSTMENT OF CATCH BASINS AND DROP INLETS OR SIMILAR STRUCTURES TO THE NEW PAVEMENT GRADE SHALL BE DONE AS ORDERED. PAYMENT WILL BE UNDER ITEM 604.45 - ADJUSTING CATCH BASIN AND DROP INLET GRATES AND FRAMES.

(22) EXISTING ANCHORS FOR CABLE AND/OR BEAM GUARDRAIL SHALL BE REMOVED AND SALVAGED INTACT TO THE STATE.

(23) ALL GUARDRAIL SHALL BE SET AT A 27 INCH RAIL HEIGHT BASED ON THE PAVEMENT OVERLAY, UNLESS OTHERWISE SHOWN OR ORDERED.

(24) EXISTING DELINEATORS AND WITNESS MARKERS THAT ARE DISTURBED SHALL BE RESET. THIS WORK WILL BE SUBSIDIARY. ADDITIONAL DELINEATORS ORDERED WILL BE PAID UNDER APPROPRIATE ITEMS OF THE CONTRACT.

(25) NO EXISTING MONUMENTS, BOUNDS, OR BENCHMARKS SHALL BE DISTURBED WITHOUT FIRST MAKING PROVISIONS FOR RELOCATION.

(26) UNPROTECTED PROJECT MARKERS SHALL BE REMOVED OR SET BACK TO 30 FEET FROM THE TRAVELED WAY AS ORDERED. THIS WORK WILL BE SUBSIDIARY.

(27) CLEARING AND GRUBBING ON THIS PROJECT WILL BE SUBSIDIARY.

(28) ALL WORK ON THIS PROJECT, UNLESS OTHERWISE SHOWN ON THE PLANS OR ORDERED, SHALL BE CONSTRUCTED WITHIN THE EXISTING RIGHT-OF-WAY.

(29) COORDINATES FOR THIS PROJECT ARE STATE PLANE AND THE BEARINGS SHOWN ARE GRID.

(30) ALL EXISTING CATCH BASINS, DROP INLETS, OR DRAINAGE MANHOLES THAT ARE TO BE RETAINED SHALL BE TREATED WITH WATER REPELLENT AND PAID UNDER ITEM 604.85.

(31) ALL CATCH BASINS AND DROP INLETS TYPE B CALLED FOR ON THIS PROJECT SHALL UTILIZE THE ALTERNATE 1 GRATE AND FRAME AS SHOWN ON PLATE 1 OF STANDARD NO. 3A.

(32) ALL CATCH BASINS AND DROP INLETS USED IN CONJUNCTION WITH GRANITE CURB SHALL BE FURNISHED WITH 3-FLANGE FRAMES.

THE FOLLOWING GENERAL NOTES WILL BE USED ON THIS PROJECT:

(1)	(2)	◯	◯	(5)	(6)	(7)	(8)	(9)	◯	◯	(12)
(13)	(14)	◯	◯	(17)	◯	◯	◯	(21)	(22)	(23)	(24)
(25)	◯	◯	◯	(29)	(30)	(31)	(32)	◯	◯	◯	◯

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

INDEX OF SHEETS AND GENERAL NOTES

REVISION DATE	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
5-7-97	GENNOTE	DETAILS	CM-5379(017)	12250	2	282

WORK ZONE TRAFFIC CONTROL STANDARD PLANS

TC-1	AMENDMENTS TO REVISION 3 (PART VI) OF THE MUTCD	REVISED	MAY 19, 1997
TC-2	PERMANENT CONSTRUCTION SIGNING	REVISED	MAY 19, 1997
TC-3	TWO-WAY TRAFFIC LANE SHIFT	REVISED	MAY 19, 1997
TC-4	BRIDGE REHABILITATION: STOP/YIELD CONTROL	REVISED	MAY 19, 1997
TC-5	BRIDGE REHABILITATION: SIGNALIZED CONTROL	REVISED	MAY 19, 1997
TC-6	TWO LANE CLOSURE UTILIZING BREAKDOWN LANE (DIVIDED HIGHWAY) SINGLE LANE CLOSURE (DIVIDED HIGHWAY)	REVISED	MAY 19, 1997
TC-7	LANE CLOSURE WITH LANE SHIFT FOR SPEED REDUCTION (DIVIDED HIGHWAY) SINGLE LANE SHIFT (DIVIDED HIGHWAY)	REVISED	MAY 19, 1997
TC-8	MULTI-LANE CLOSURE (DIVIDED HIGHWAY)	REVISED	MAY 19, 1997

NOTE:
SHEETS TC-1 THROUGH TC-8 AMEND PART VI (REVISION 3) OF THE *MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).* THEREFORE, THESE SHEETS ARE TO BE USED IN CONJUNCTION WITH THE *MUTCD* AND SECTION 619 OF THE STANDARD SPECIFICATIONS FOR WORK ZONE TRAFFIC CONTROL ON ALL PROJECTS.

STANDARD PLANS

STANDARD	NO. 1	CONCRETE AND M.R.M. HEADWALLS	REVISED	MARCH 24, 1977
STANDARD	NO. 1A	CONCRETE AND M.R.M. HEADWALLS	REVISED	MAY 8, 1970
STANDARD	NO. 2	STEEL ARCH PIPES, SLOPE PAVING, UNDERDRAIN HEADWALL	REVISED	MARCH 1, 1983
STANDARD	NO. 2A	CORRUGATED ALUMINUM PIPE, PIPE ARCH, UNDERDRAIN FLUSHING BASIN	REVISED	DECEMBER 20, 1982
STANDARD	NO. 3	CATCH BASINS, DROP INLETS	REVISED	OCTOBER 17, 1983
STANDARD	NO. 3A	GRATES FOR C.B.'S & D.I.'S	REVISED	OCTOBER 17, 1983
STANDARD	NO. 3B	CATCH BASINS, DROP INLETS, TRAP	REVISED	OCTOBER 17, 1983
STANDARD	NO. 4	CURBING	REVISED	APRIL 21, 1982
STANDARD	NO. 5	CONCRETE BOUND, STEPS	REVISED	NOVEMBER 1, 1984
STANDARD	NO. 5A	GUTTERS, SLUICE, SLOPES, MUCK EXCAVATION	REVISED	FEBRUARY 26, 1975
STANDARD	NO. GR-1	BEAM GUARDRAIL, STD. SECTION-WOOD POSTS & HARDWARE DETAILS	REVISED	MAY 1, 1995
STANDARD	NO. GR-1A	BEAM GUARDRAIL, STD. SECTION-STEEL POSTS & HARDWARE DETAILS	REVISED	MAY 1, 1995
STANDARD	NO. GR-2	BEAM GUARDRAIL, TERMINAL UNIT TYPE MELT	REVISED	MAY 1, 1995
STANDARD	NO. GR-2A	BEAM GUARDRAIL, MELT HARDWARE DETAILS	REVISED	MAY 1, 1995
STANDARD	NO. GR-2B	BEAM GUARDRAIL, MELT HARDWARE DETAILS	REVISED	MAY 1, 1995
STANDARD	NO. GR-3	BEAM GUARDRAIL, TERMINAL UNIT TYPE G-2	REVISED	MAY 1, 1995
STANDARD	NO. GR-4	PRECAST CONC. MEDIAN BARRIER 1070 mm F-SHAPE (DOUBLE-FACED)	REVISED	MAY 1, 1995
STANDARD	NO. 9	WOVEN WIRE & CHAIN LINK FENCE	REVISED	AUGUST 2, 1977
STANDARD	NO. 9A	STEEL WITNESS MARKER, STEEL SIGN POST, DELINEATOR POST	REVISED	MAY 15, 1985
STANDARD	NO. 10		DELETED	
STANDARD	NO. 10A		DELETED	
STANDARD	NO. 11	END SECTIONS FOR PIPES	REVISED	MAY 21, 1975
STANDARD	NO. 12	DELINEATORS FOR GUARDRAIL, MEDIAN BARRIERS	REVISED	MAY 15, 1985
STANDARD	NO. 12A	DELINEATOR SPACING FOR RAMPS AND LOOPS	REVISED	MAY 15, 1985
STANDARD	NO. 13		DELETED	
STANDARD	NO. 14		DELETED	
STANDARD	NO. 15		DELETED	
STANDARD	NO. 16		DELETED	

THE FOLLOWING STANDARD PLANS WILL BE USED ON THIS PROJECT:

1		2	2A	3	3A	3B	4	5	5A	GR-1		GR-2	GR-2A	GR-2B		GR-4	9	9A	11	12	12A

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION ◦ BUREAU HIGHWAY DESIGN

INDEX OF STANDARD PLANS

REVISION DATE	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
12-4-97	INDEX	DETAILS	CM-5379(017)	H12250	3	282

ENGINEERING

SURVEY OR TRAVERSE LINE

CONSTRUCTION LINE

P.C., P.T. & P.O.T. (IN CONST. & TRAVERSE LINES)
P.I. (IN CONST. & TRAVERSE LINES)

EQUATION OF TWO LINES

PROFILE GROUND LINE

PROFILE GRADE LINE

CROSS SECTION GROUND LINE (INK)

CROSS SECTION TEMPLATE LINE (LEAD)

SLOPE LINE (FILL)

SLOPE LINE (CUT)

GROUND ELEVATION (LEFT) 22.12

GRADE ELEVATION (RIGHT) 24.20

PROPERTY PARCEL NUMBER 2

CLEARING & GRUBBING AREA E

INTERSTATE NUMBERED HIGHWAY 93

UNITED STATES NUMBERED HIGHWAY 3

STATE NUMBERED HIGHWAY 10

DRAINAGE

MANHOLE (EXISTING) M.H.

MANHOLE (PROPOSED)

CATCH BASIN (EXISTING) C.B.

CATCH BASIN (PROPOSED)

DROP INLET (EXISTING) D.I.

DROP INLET (PROPOSED)

DRAINAGE PIPE (EXISTING) (LABEL SIZE & TYPE)

DRAINAGE PIPE (PROPOSED) (LABEL SIZE & TYPE)

SHOW DIRECTION OF FLOW

UNDERDRAIN (EXISTING)

UNDERDRAIN (PROPOSED)

HEADER (EXISTING)

HEADER (PROPOSED)

OPEN DITCH (PROPOSED) (SHOW DIRECTION OF FLOW)

STONE SLOPE PROTECTION

BOUNDARIES

RIGHT OF WAY LINE (LABEL TYPE)

PROPERTY LINE SMITH

TOWN LINE STANDISH

COUNTY LINE TOWN LINE BOW CONCORD

STATE LINE COUNTY LINE COOS GRAFTON

STATE LINE MAINE NEW HAMPSHIRE

BOUND Bnd.

IRON PIPE OR PIN I.P.

NATIONAL FOREST

UTILITIES

TELEPHONE OR TELEGRAPH POLE

POWER POLE

JOINT OCCUPANCY

POLE

GUY POLE OR STUB

PLOT POINT AT FACE NOT CENTER OF SYMBOL

NOTE: REMOVE OR NEW AS APPLICABLE I.E.

R

N +22 5

LIGHT POLE

LIGHT ON POWER POLE

LIGHT ON JOINT POLE

HYDRANT

MANHOLE

(LABEL TYPE)

UNDERGROUND WATER (EXISTING) W

UNDERGROUND WATER (PROPOSED) PW

UNDERGROUND SEWER (EXISTING) S

UNDERGROUND SEWER (PROPOSED) PS

UNDERGROUND TELEPHONE (EXISTING) T

UNDERGROUND TELEPHONE (PROPOSED) PT

UNDERGROUND ELECTRIC (EXISTING) E

UNDERGROUND ELECTRIC (PROPOSED) PE

UNDERGROUND GAS (EXISTING) G

UNDERGROUND GAS (PROPOSED) PG

ABANDONED GAS (EXISTING) AG

STORM DRAINAGE (FORMERLY SEWER) D

ALSO SEE CROSS SECTIONS, MODEL PLANS

LABEL SIZE AND TYPE ON (EXISTING)

OVERHEAD LINES, ELECTRIC, FIRE, CABLE TELEPHONE, AND TRAFFIC SIGNAL — O-E, O-F, O-T.V., O-T, O-T.S.

WATER GATE

WATER SHUT OFF

GAS SHUT OFF

RAILROAD (LABEL OWNERSHIP)

RAILROAD SIGN

RAILROAD SIGNAL (LABEL TYPE)

SIGNAL CONDUIT (EXISTING) MD

SIGNAL CONDUIT (PROPOSED) MD

MAGNETIC DETECTOR SLEEVE

LOOP DETECTOR 8'X10' (LABEL SIZE) 8'X10'

PULLBOX P.B. P.B.

HANDHOLE H.H. H.H.

CONTROLLER CABINET C.C. C.C.

EXISTING — PROPOSED

SPREAD FOOTING 3 m 2 m (LABEL SIZE)

CYLINDRICAL FOUNDATION

★ MAST ARM POLE (WITH SIGNAL HEADS)

NOTE ANGLE FROM ℄ TO ARM

STEEL SPAN WIRE POLES

PEDESTRIAN SIGNAL POLE

TRAFFIC FLOW

TRAFFIC SIGNAL (EXISTING)
STOP BAR

STREET LIGHT CONDUIT

LUMINAIRE (EXISTING)

★ LUMINAIRE (PROPOSED) (LABEL TYPE AND WATTAGE)

GENERAL CULTURE

TRAVELED WAY S.T.G. (LABEL TYPE)

DRIVEWAYS gravel (LABEL TYPE)

BUILDINGS porch (LABEL HOUSE OR TYPE OF BUILDING)

FOUNDATION (LABEL TYPE)

GUARDRAIL (LABEL TYPE) (PROPOSED) (EXISTING) B.G.R. C.G.R.

CURB (EXISTING) (LABEL TYPE)

CURB (PROPOSED)

STEPS AND WALK (LABEL TYPE)

INTERMITTENT WATER COURSE

SHORE LINE RIVER (STREAM) POND

SWAMP, MARSH OR WETLANDS

LIMIT OF DELINEATED WETLAND (LABEL)

BRUSH OR WOODS LINE

TREES (DECIDUOUS) (SHOW CIRCUMFERENCE IN INCHES & TYPE)

TREES (CONIFEROUS) (SHOW CIRCUMFERENCE IN INCHES & TYPE)

SYMBOL ONLY ON PLAN SHEET

STUMPS (SHOW CIRCUMFERENCE IN INCHES)

ORCHARD (LABEL)

HEDGE

WELL W

SEPTIC TANK S

LEACH FIELD LEACH FIELD

GAS PUMPS

STORAGE TANKS (LABEL SIZE, TYPE & USE)

CEMETERY + OR CEMETERY

BRIDGE CROSSING STREAM

HIGHWAY OVERPASS

ROCK OUTCROP

OLD GROUND (TYPICALS)

ROCK LINE (TYPICALS & SECTIONS ONLY)

STONE WALL OR

RETAINING WALL (LABEL TYPE) (POINTS TOWARDS HIGH GROUND)

FENCE (BARBED WIRE)

FENCE (OTHER TYPE AND LABEL) (LABEL TYPE)

SIGNS

MAIL BOX Mailbox

PHONE BOOTH Phone

FLAG POLE

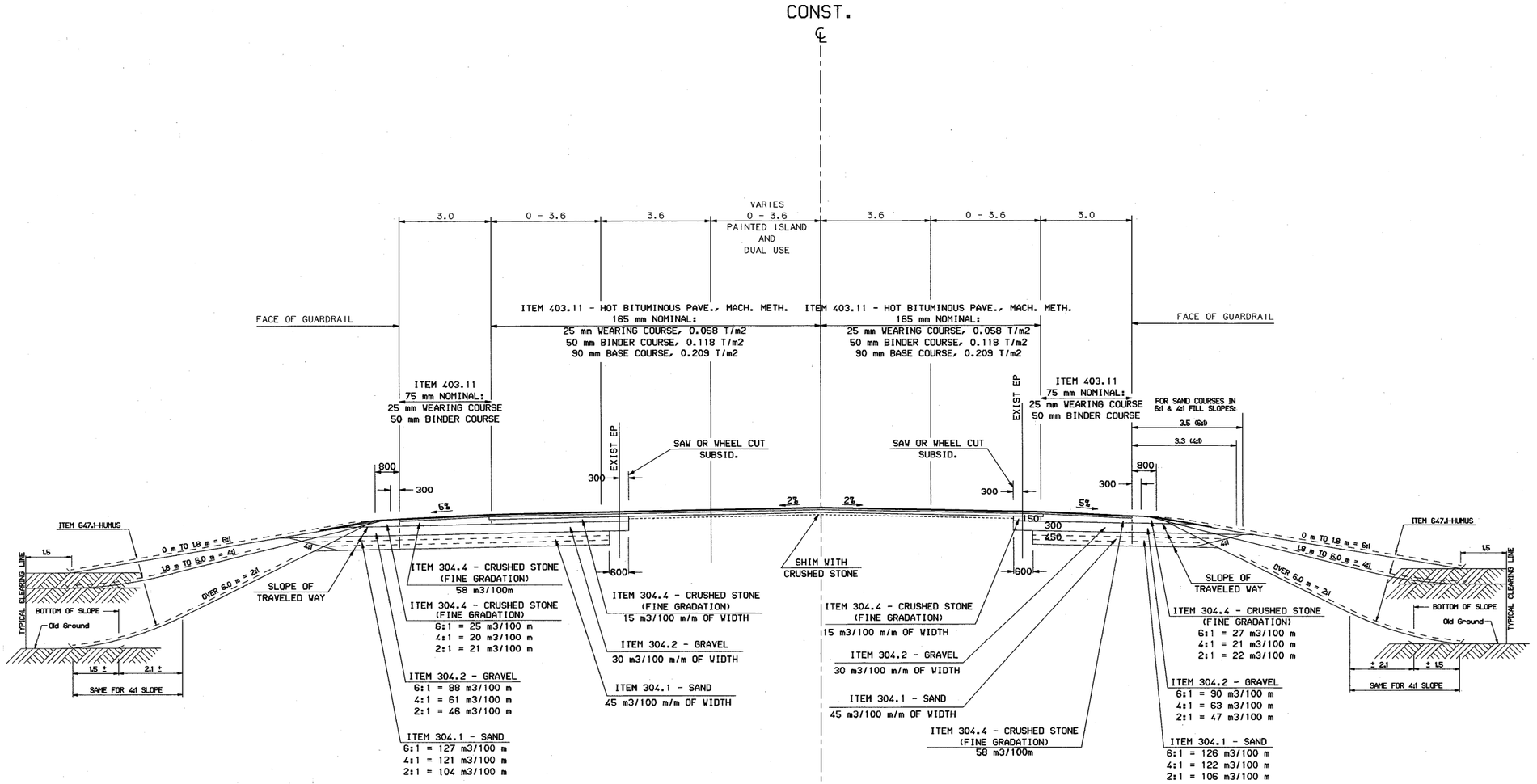
BENCH MARK F.P.

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

STANDARD SYMBOLS

REVISION DATE	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
★ 3-17-92	MSYMBOL	DETAILS	CM-5379(017)	12250	4	282



GENERAL NOTES

1. ALL DIMENSIONS SHOWN ARE IN MILLIMETERS OR METERS. WHOLE NUMBERS INDICATE MILLIMETERS, DECIMAL NUMBERS INDICATE METERS UNLESS OTHERWISE NOTED.
2. OPTIONAL SAND COURSES SHALL BE CONSTRUCTED AT THE LOCATIONS AND DEPTHS AS SHOWN ON THE CROSS-SECTIONS OR AS ORDERED BY THE ENGINEER.
3. LEDGE AND BOULDER OUTCROPS SHALL BE REMOVED TO EARTH SLOPES WHEN ORDERED BY THE ENGINEER.
4. REMOVE EXISTING PAVEMENT AND SHIM WITH CRUSHED STONE (ITEM 304.4).

ROUTE 33
STA. 101+50 - 105+92

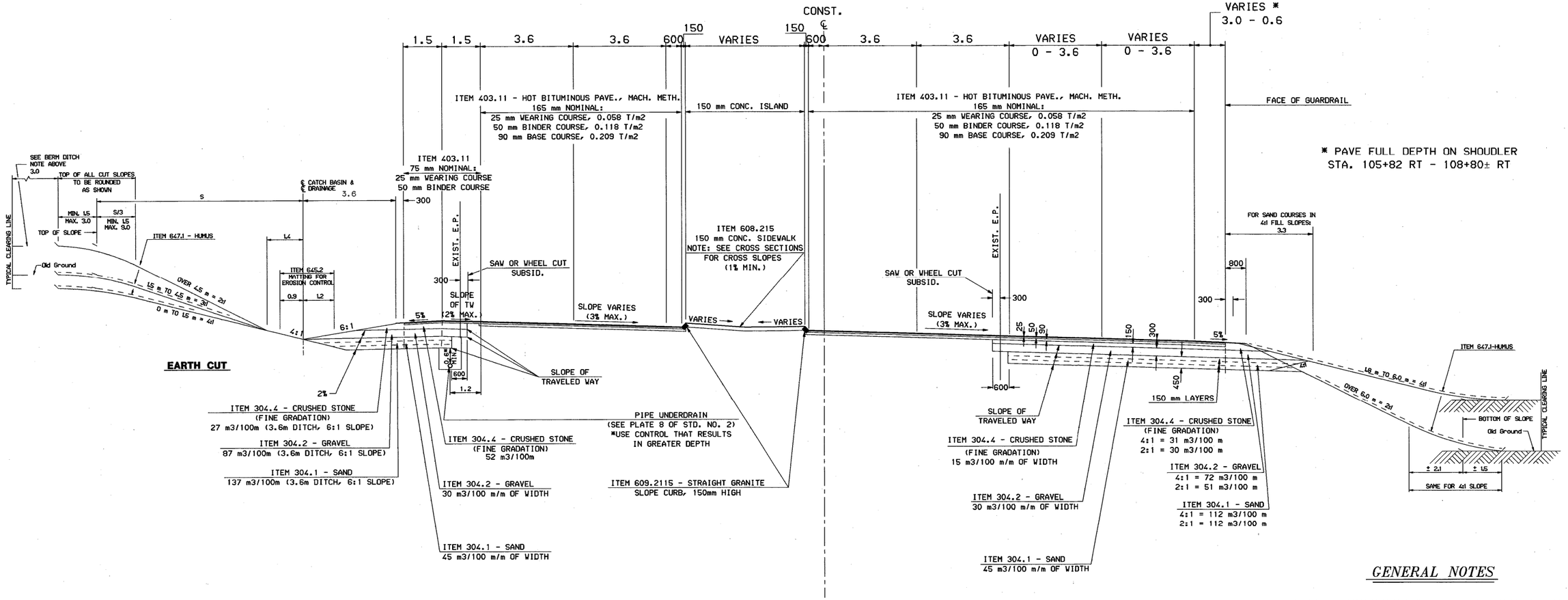
METRIC

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF HIGHWAY DESIGN

ROUTE 33 TYPICAL

SCALE	REVISION DATE	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
1:75	08-15-96	TYP33_1	TYPICALS	CM-5379(017)	12250	5	282



ROUTE 33
STA. 105+92 - 108+15

NOTE: START UNDERDRAIN AT APPROX. STA. 105+50 LT. AND ENDING AT STA. 106+70 LT.

GENERAL NOTES

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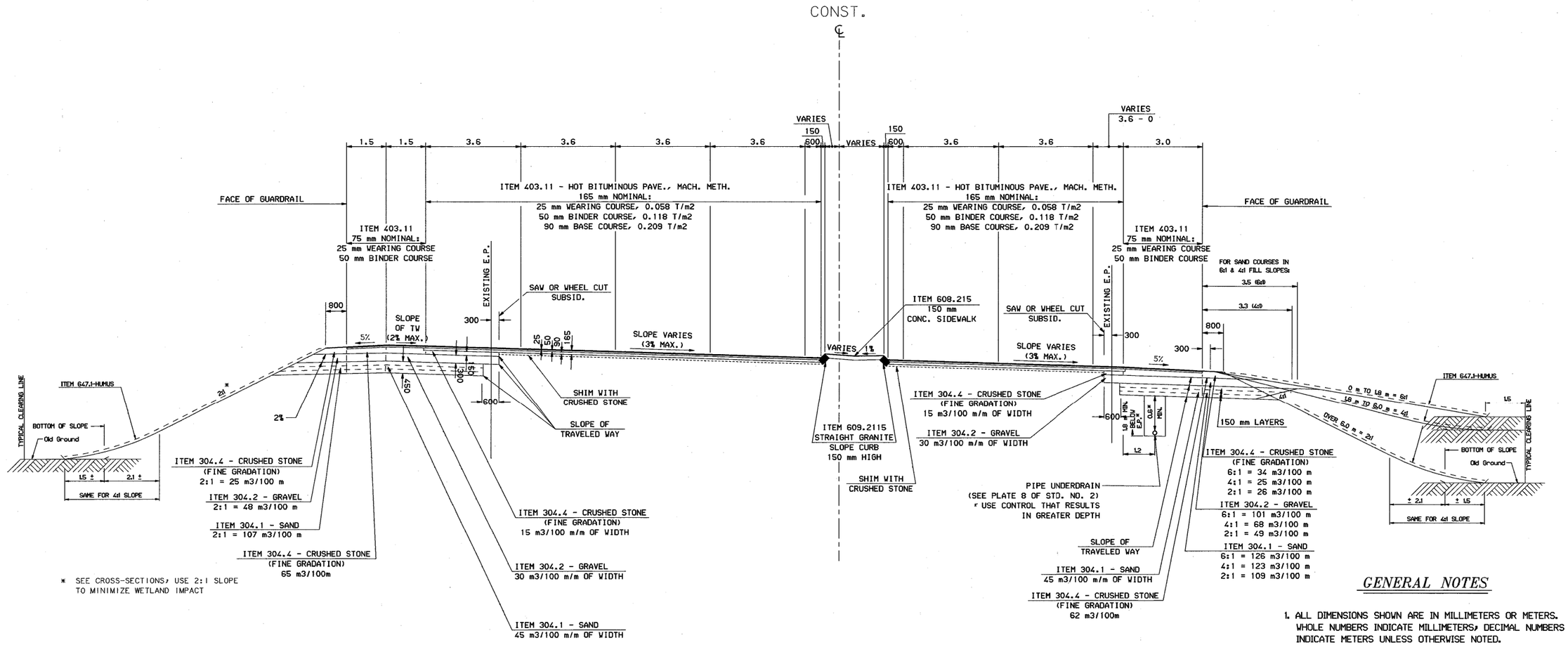
METRIC

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

ROUTE 33 TYPICAL

SCALE	REVISION DATE	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
1:75	08-15-96	TYP33_2	TYPICALS	CM-5379(017)	12250	6	282



* SEE CROSS-SECTIONS, USE 2:1 SLOPE TO MINIMIZE WETLAND IMPACT

NOTE: START UNDERDRAIN AT STA. 109+40 RT.

GENERAL NOTES

1. ALL DIMENSIONS SHOWN ARE IN MILLIMETERS OR METERS. WHOLE NUMBERS INDICATE MILLIMETERS, DECIMAL NUMBERS INDICATE METERS UNLESS OTHERWISE NOTED.
2. OPTIONAL SAND COURSES SHALL BE CONSTRUCTED AT THE LOCATIONS AND DEPTHS AS SHOWN ON THE CROSS-SECTIONS OR AS ORDERED BY THE ENGINEER.
3. LEDGE AND BOULDER OUTCROPS SHALL BE REMOVED TO EARTH SLOPES WHEN ORDERED BY THE ENGINEER.
4. REMOVE EXISTING PAVEMENT AND SHIM WITH CRUSHED STONE (ITEM 304.4).

ROUTE 33
STA. 108+20 - 110+80

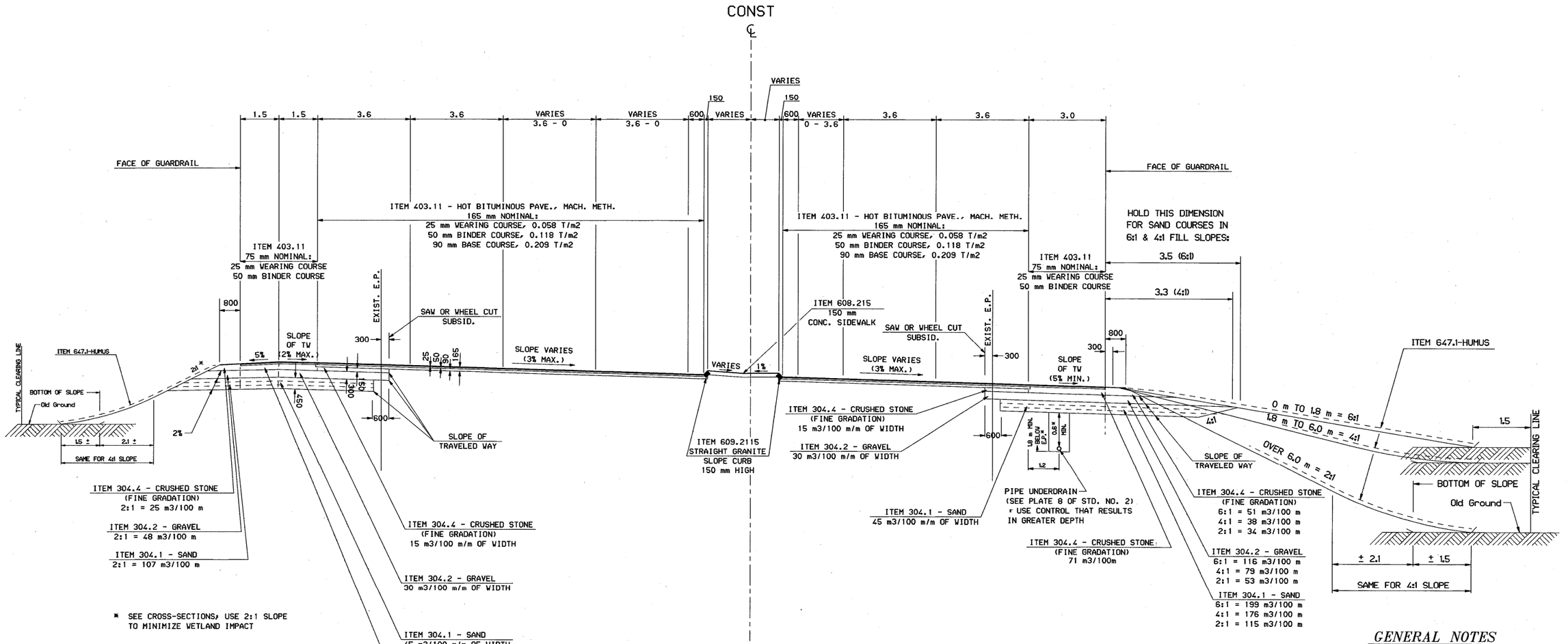
METRIC

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF HIGHWAY DESIGN

ROUTE 33 TYPICAL

SCALE	REVISION DATE	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
1:75	08-15-96	TYP33_3	TYPICALS	CM-5379(017)	12250	7	282



* SEE CROSS-SECTIONS, USE 2:1 SLOPE TO MINIMIZE WETLAND IMPACT

ROUTE 33
STA. 110+80± - 111+40±

METRIC

GENERAL NOTES

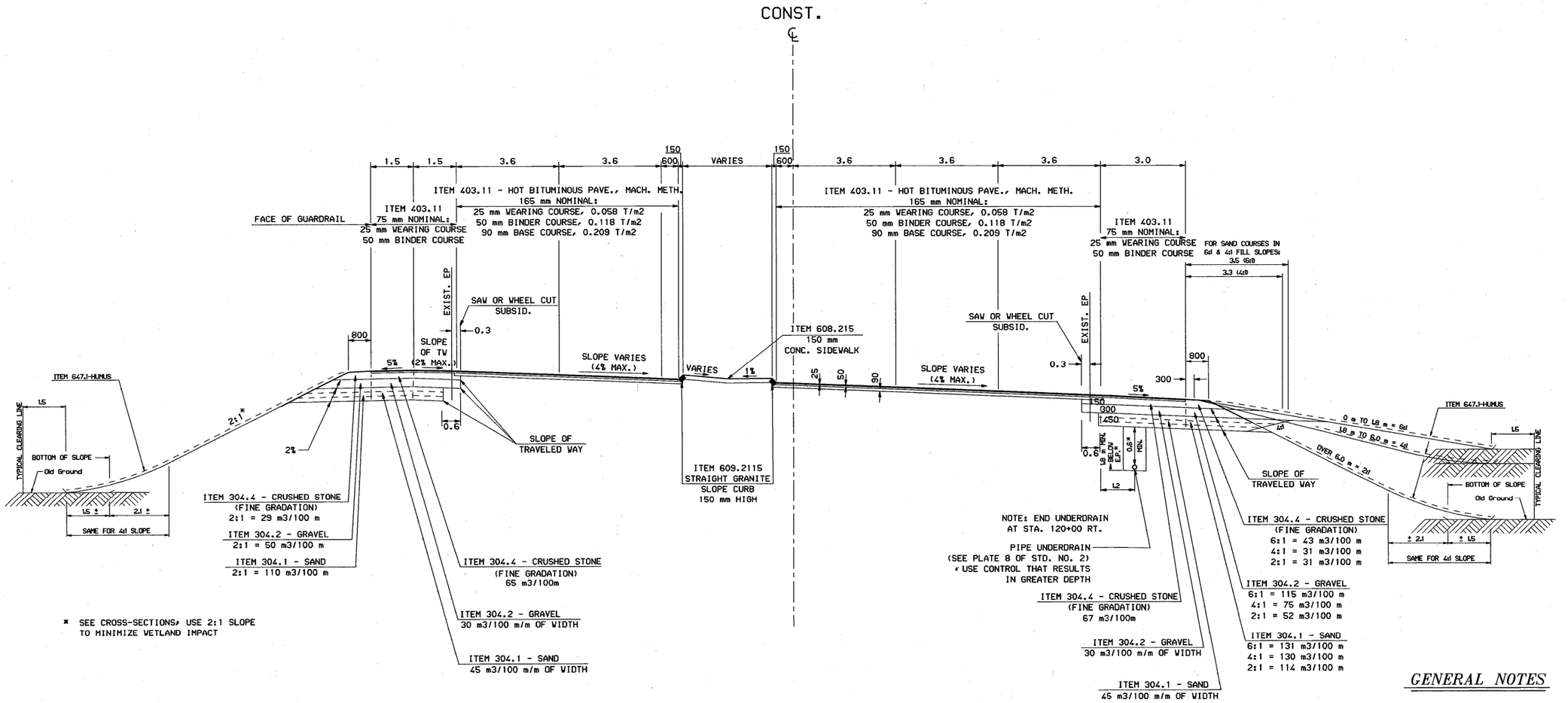
1. ALL DIMENSIONS SHOWN ARE IN MILLIMETERS OR METERS. WHOLE NUMBERS INDICATE MILLIMETERS, DECIMAL NUMBERS INDICATE METERS UNLESS OTHERWISE NOTED.
2. OPTIONAL SAND COURSES SHALL BE CONSTRUCTED AT THE LOCATIONS AND DEPTHS AS SHOWN ON THE CROSS-SECTIONS OR AS ORDERED BY THE ENGINEER.
3. LEDGE AND BOULDER OUTCROPS SHALL BE REMOVED TO EARTH SLOPES WHEN ORDERED BY THE ENGINEER.
4. REMOVE EXISTING PAVEMENT AND SHIM WITH CRUSHED STONE (ITEM 304.4).

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF HIGHWAY DESIGN

ROUTE 33 TYPICAL

SCALE	REVISION DATE	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
1:75	08-15-96	TYP33_4	TYPICALS	CM-5379(017)	12250	8	292



* SEE CROSS-SECTIONS, USE 2:1 SLOPE TO MINIMIZE WETLAND IMPACT

ROUTE 33
STA. 111+40 - 112+62

GENERAL NOTES

1. ALL DIMENSIONS SHOWN ARE IN MILLIMETERS OR METERS. WHOLE NUMBERS INDICATE MILLIMETERS, DECIMAL NUMBERS INDICATE METERS UNLESS OTHERWISE NOTED.
2. OPTIONAL SAND COURSES SHALL BE CONSTRUCTED AT THE LOCATIONS AND DEPTHS AS SHOWN ON THE CROSS-SECTIONS OR AS ORDERED BY THE ENGINEER.
3. LEDGE AND BOULDER OUTCROPS SHALL BE REMOVED TO EARTH SLOPES WHEN ORDERED BY THE ENGINEER.
4. REMOVE EXISTING PAVEMENT AND SHIM WITH CRUSHED STONE (ITEM 304.4).

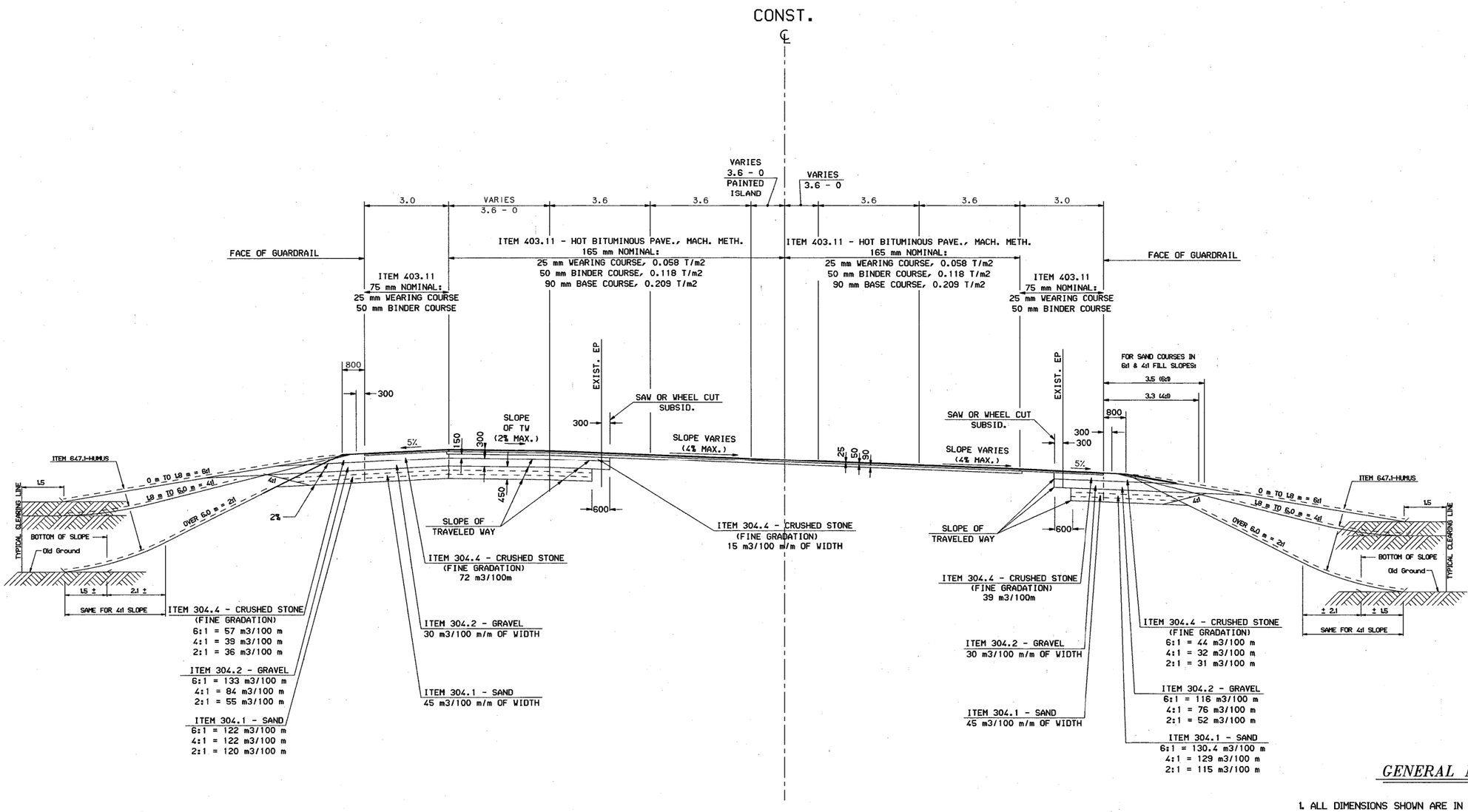
METRIC

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF HIGHWAY DESIGN

ROUTE 33 TYPICAL

SCALE	REVISION DATE	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
1:75	08-15-96	TYP33_5	TYPICALS	CM-5379(017)	12250	9	282



GENERAL NOTES

1. ALL DIMENSIONS SHOWN ARE IN MILLIMETERS OR METERS. WHOLE NUMBERS INDICATE MILLIMETERS, DECIMAL NUMBERS INDICATE METERS UNLESS OTHERWISE NOTED.
2. OPTIONAL SAND COURSES SHALL BE CONSTRUCTED AT THE LOCATIONS AND DEPTHS AS SHOWN ON THE CROSS-SECTIONS OR AS ORDERED BY THE ENGINEER.
3. LEDGE AND BOULDER OUTCROPS SHALL BE REMOVED TO EARTH SLOPES WHEN ORDERED BY THE ENGINEER.
4. REMOVE EXISTING PAVEMENT AND SHIM WITH CRUSHED STONE (ITEM 304.4).

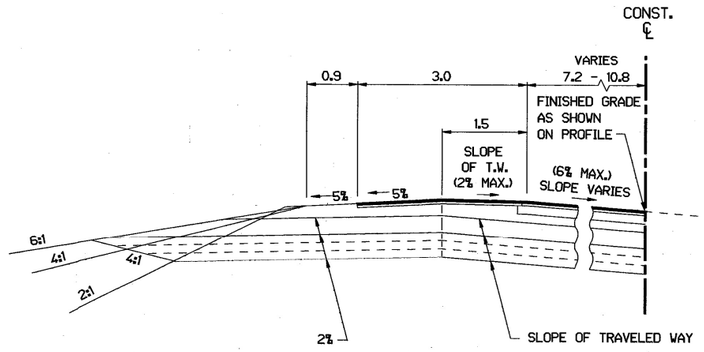
ROUTE 33
STA. 112+62 - 114+24

METRIC

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

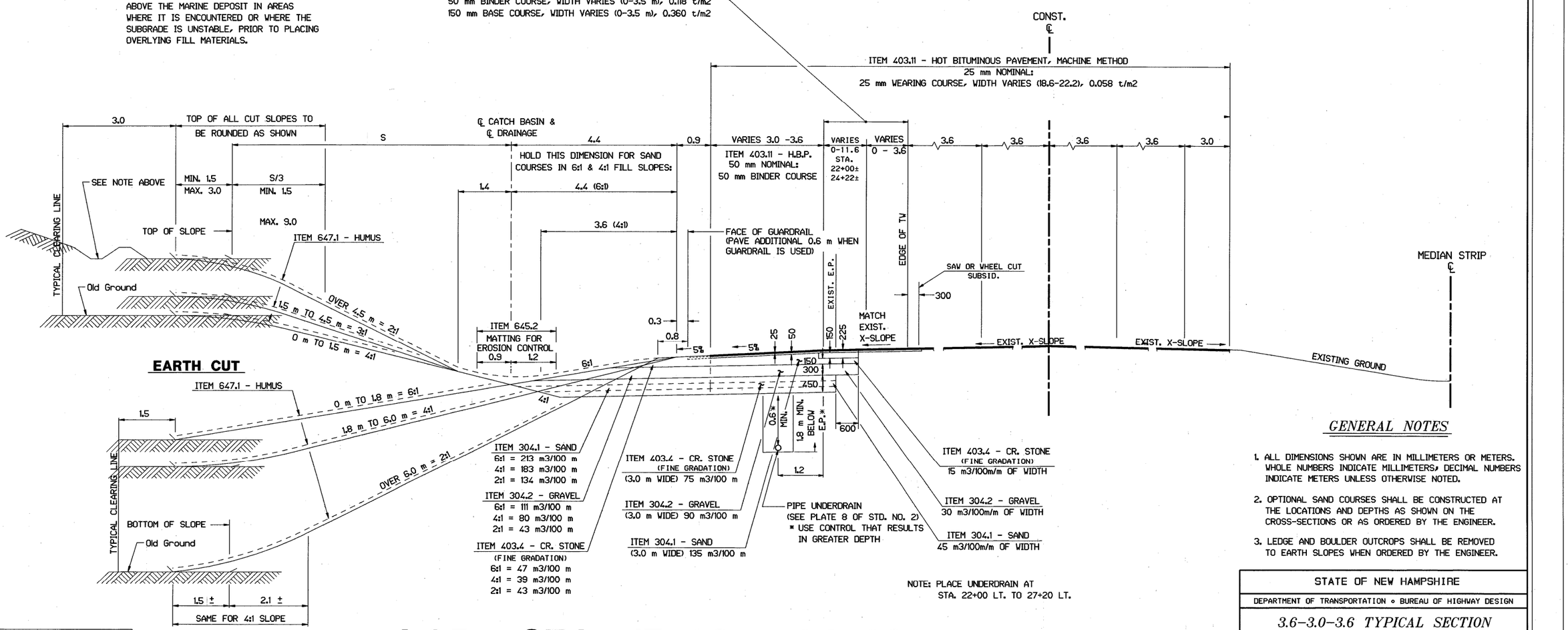
ROUTE 33 TYPICAL

SCALE	REVISION DATE	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
1:75	08-15-96	TYP33_6	TYPICALS	CM-5379(017)	12250	10	282



SUPERELEVATED SECTIONS

NOTE: CONSTRUCT ITEM 593.1 -GEOTEXTILE, WOVEN AT THE DIRECTION OF THE ENGINEER, ABOVE THE MARINE DEPOSIT IN AREAS WHERE IT IS ENCOUNTERED OR WHERE THE SUBGRADE IS UNSTABLE, PRIOR TO PLACING OVERLYING FILL MATERIALS.



NOTE: PLACE UNDERDRAIN AT STA. 22+00 LT. TO 27+20 LT.

GENERAL NOTES

1. ALL DIMENSIONS SHOWN ARE IN MILLIMETERS OR METERS. WHOLE NUMBERS INDICATE MILLIMETERS, DECIMAL NUMBERS INDICATE METERS UNLESS OTHERWISE NOTED.
2. OPTIONAL SAND COURSES SHALL BE CONSTRUCTED AT THE LOCATIONS AND DEPTHS AS SHOWN ON THE CROSS-SECTIONS OR AS ORDERED BY THE ENGINEER.
3. LEDGE AND BOULDER OUTCROPS SHALL BE REMOVED TO EARTH SLOPES WHEN ORDERED BY THE ENGINEER.

METRIC

I-95 STA. 17+20 - 24+20

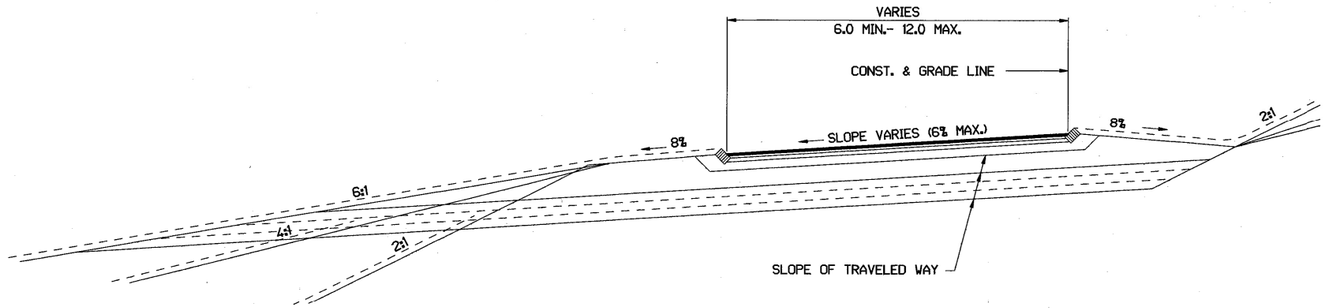
STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

3.6–3.0–3.6 TYPICAL SECTION
HALF SECTION FOR I–95 SB LANES

SCALE	REVISION DATE	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
1:50	08-15-96	TYP-I-95	TYPICALS	CM-5379(017)	12250	11	282

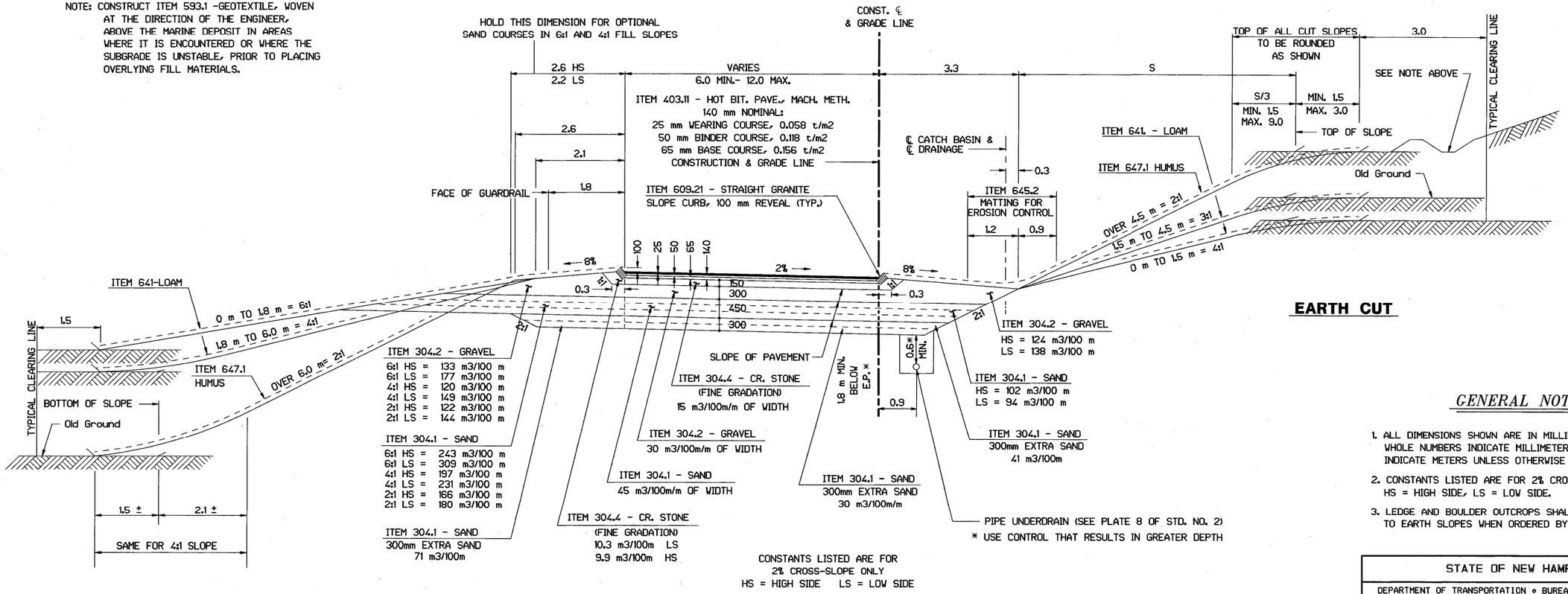
CURBED RAMP



NOTE: ADDITIONAL SAND COURSES
SB ON RAMP (EXIT 3B) 400+00 TO 401+00
SB OFF RAMP (EXIT 3B) 300+00 TO 304+20
PLACE UNDERDRAIN AT LOCATIONS
WITH ADDITIONAL SAND COURSES

SUPERELEVATED SECTION

NOTE: CONSTRUCT ITEM 593.1 -GEOTEXTILE, WOVEN AT THE DIRECTION OF THE ENGINEER, ABOVE THE MARINE DEPOSIT IN AREAS WHERE IT IS ENCOUNTERED OR WHERE THE SUBGRADE IS UNSTABLE, PRIOR TO PLACING OVERLYING FILL MATERIALS.



EARTH CUT

GENERAL NOTES

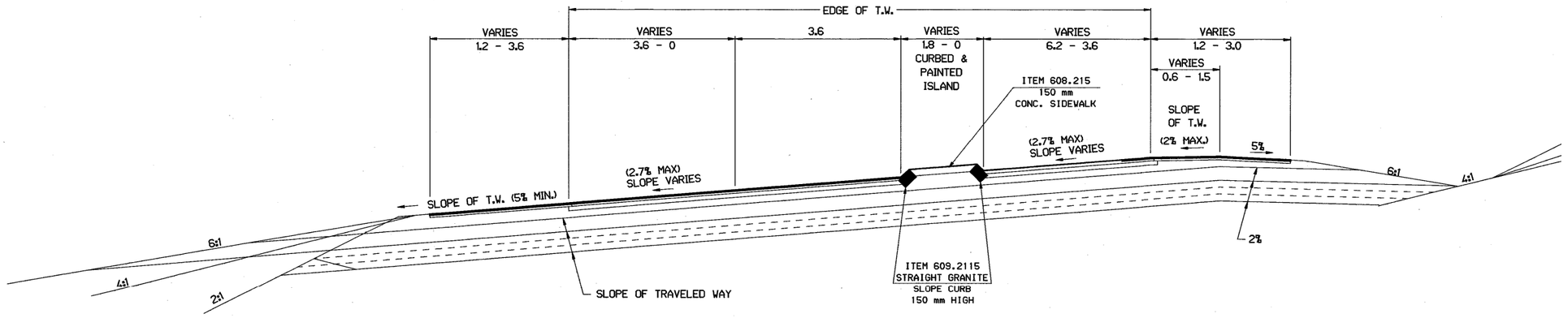
1. ALL DIMENSIONS SHOWN ARE IN MILLIMETERS OR METERS. WHOLE NUMBERS INDICATE MILLIMETERS, DECIMAL NUMBERS INDICATE METERS UNLESS OTHERWISE NOTED.
2. CONSTANTS LISTED ARE FOR 2% CROSS-SLOPE ONLY. HS = HIGH SIDE, LS = LOW SIDE.
3. LEDGE AND BOULDER OUTCROPS SHALL BE REMOVED TO EARTH SLOPES WHEN ORDERED BY THE ENGINEER.

SOUTHBOUND ON AND OFF RAMPS

METRIC

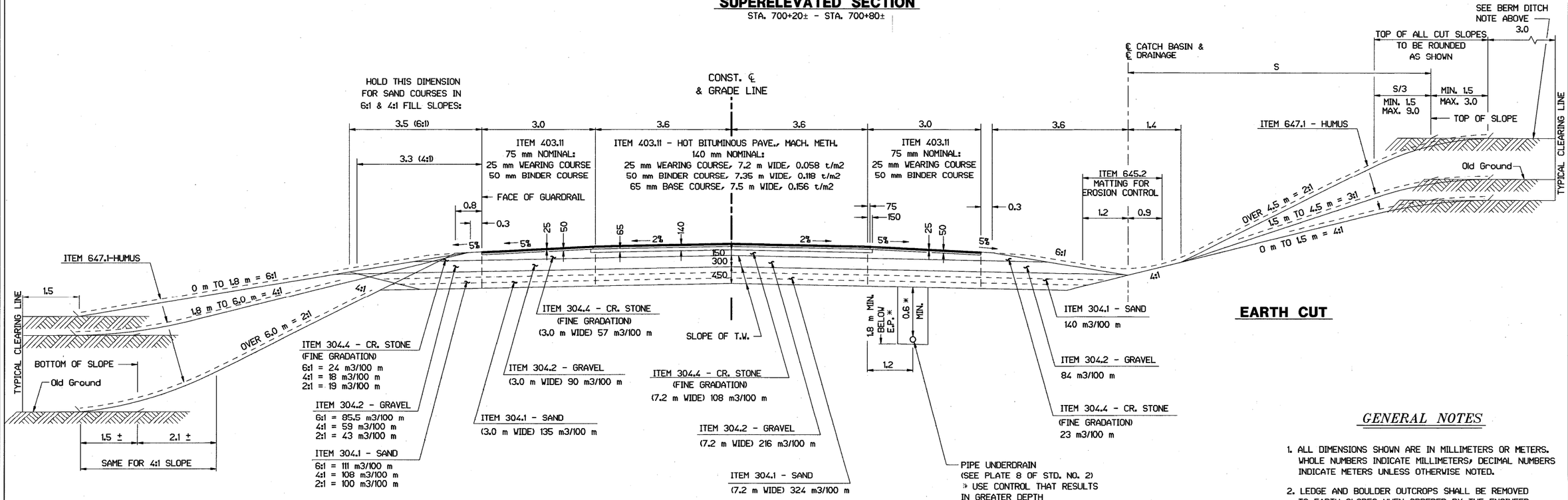
STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN
SOUTHBOUND ON & OFF RAMPS

SCALE	REVISION DATE	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
1:50	08-15-96	RAMPTYP	TYPICALS	CM-5379(017)	12250	12	282



SUPERELEVATED SECTION

STA. 700+20± - STA. 700+80±



EARTH CUT

GENERAL NOTES

1. ALL DIMENSIONS SHOWN ARE IN MILLIMETERS OR METERS. WHOLE NUMBERS INDICATE MILLIMETERS, DECIMAL NUMBERS INDICATE METERS UNLESS OTHERWISE NOTED.
2. LEDGE AND BOULDER OUTCROPS SHALL BE REMOVED TO EARTH SLOPES WHEN ORDERED BY THE ENGINEER.

SOUTH ACCESS RD.
STA. 700+00 - 703+80

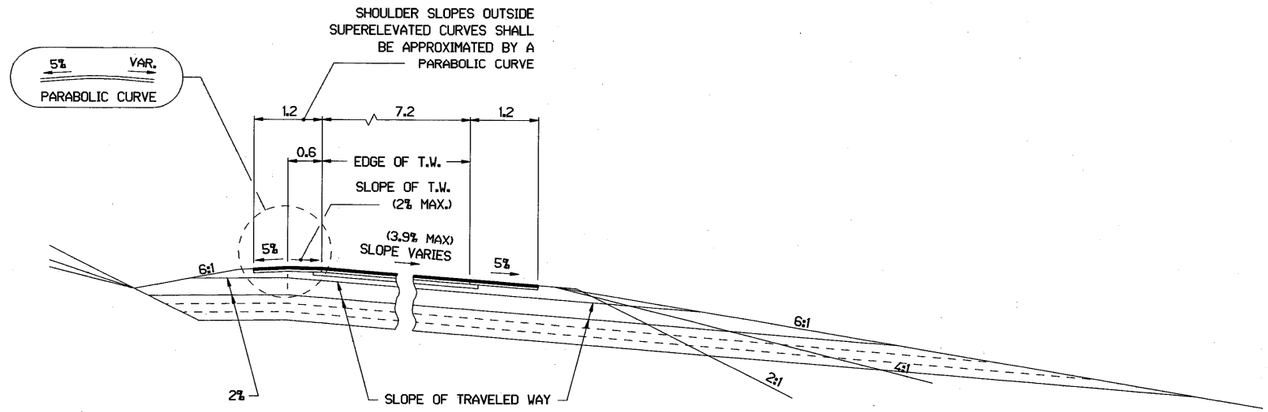
METRIC

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF HIGHWAY DESIGN

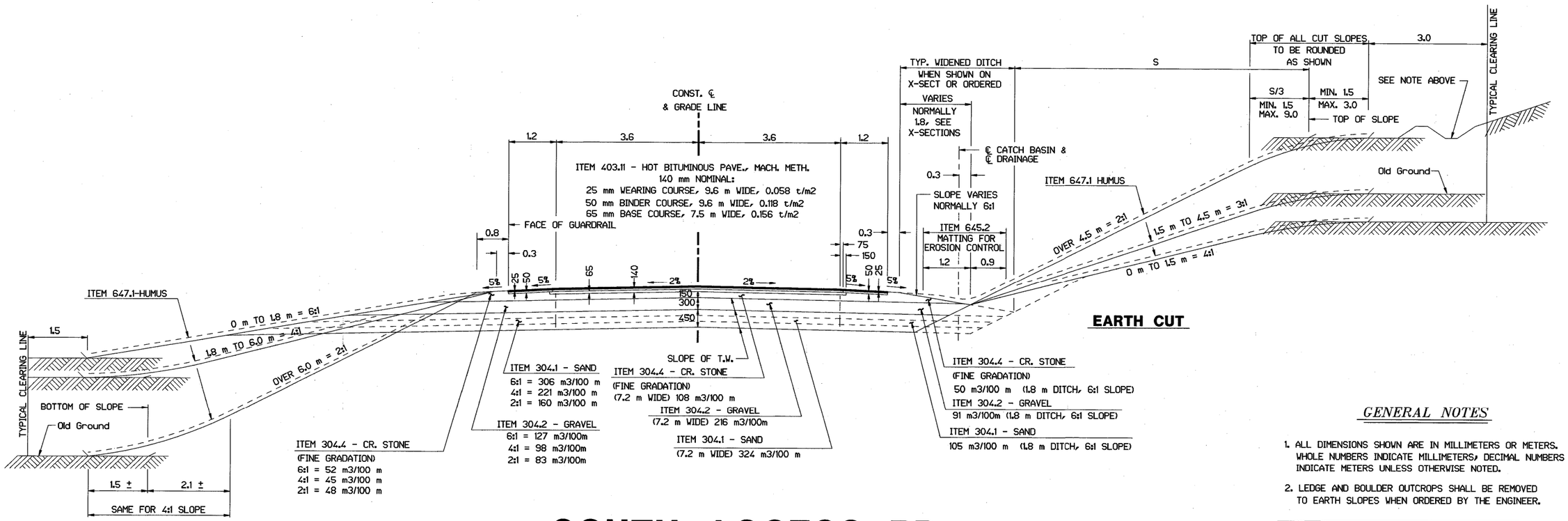
SOUTH ACCESS ROAD TYPICAL

SCALE	REVISION DATE	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
1:50	08-15-96	ACCESSRD	TYPICALS	CM-5379(017)	12250	13	282



SUPERELEVATED, UNCURBED SECTION

STA 703+36 - 705+75 LT
STA 707+50 - 710+30 LT



EARTH CUT

GENERAL NOTES

1. ALL DIMENSIONS SHOWN ARE IN MILLIMETERS OR METERS. WHOLE NUMBERS INDICATE MILLIMETERS, DECIMAL NUMBERS INDICATE METERS UNLESS OTHERWISE NOTED.
2. LEDGE AND BOULDER OUTCROPS SHALL BE REMOVED TO EARTH SLOPES WHEN ORDERED BY THE ENGINEER.

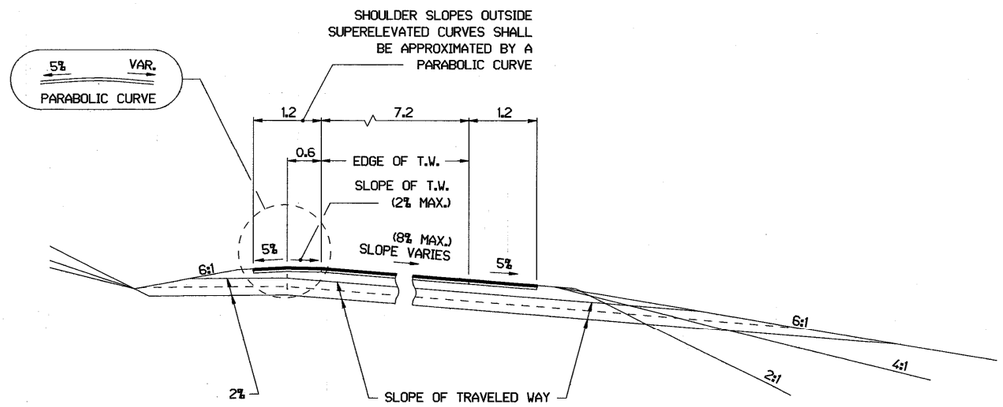
SOUTH ACCESS RD.
STA. 703+80 - 710+30

METRIC

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

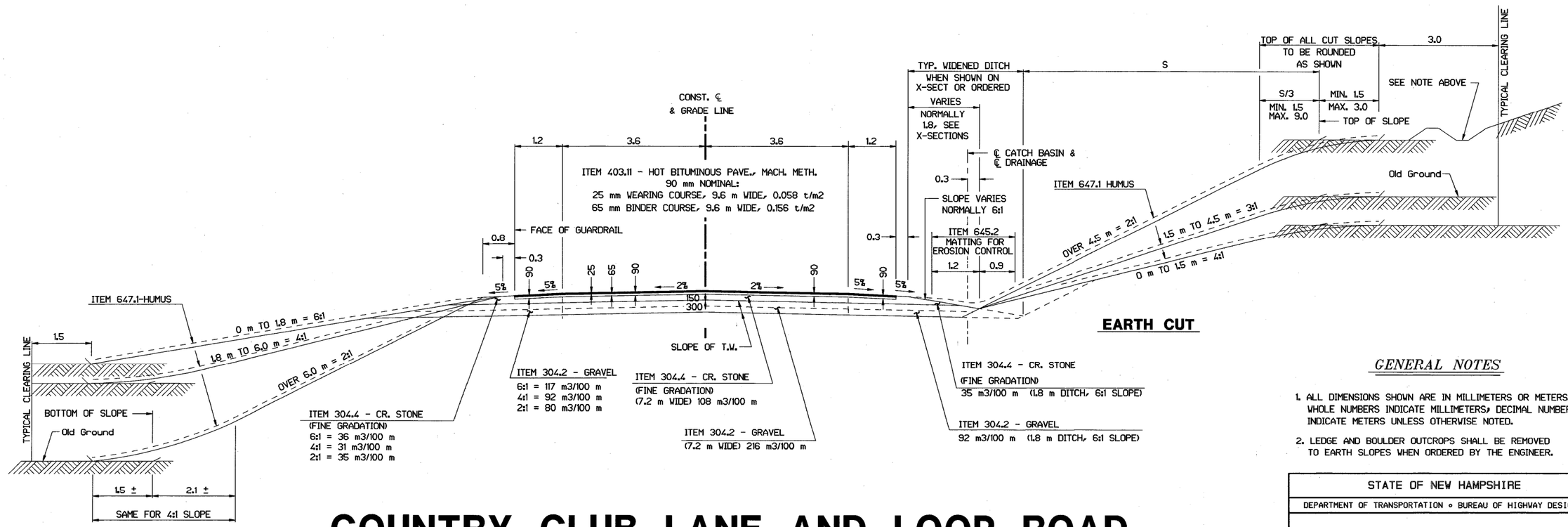
SOUTH ACCESS ROAD TYPICAL

SCALE	REVISION DATE	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
1:50	08-15-96	ACCESSEX	TYPICALS	CM-5379(017)	12250	14	282



SUPERELEVATED, UNCURBED SECTION

STA 61+80 - 62+60 LT
STA 61+80 - 63+35 RT



EARTH CUT

COUNTRY CLUB LANE AND LOOP ROAD

METRIC

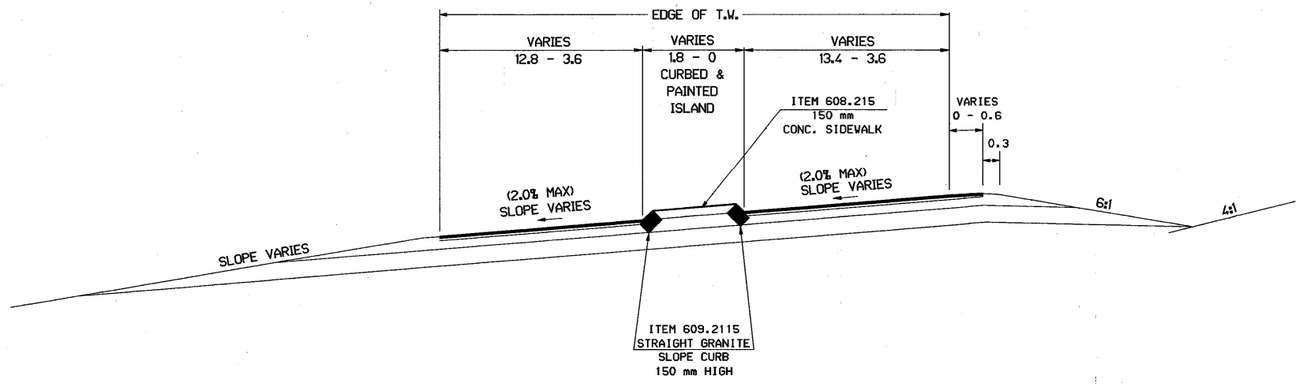
GENERAL NOTES

1. ALL DIMENSIONS SHOWN ARE IN MILLIMETERS OR METERS. WHOLE NUMBERS INDICATE MILLIMETERS, DECIMAL NUMBERS INDICATE METERS UNLESS OTHERWISE NOTED.
2. LEDGE AND BOULDER OUTCROPS SHALL BE REMOVED TO EARTH SLOPES WHEN ORDERED BY THE ENGINEER.

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

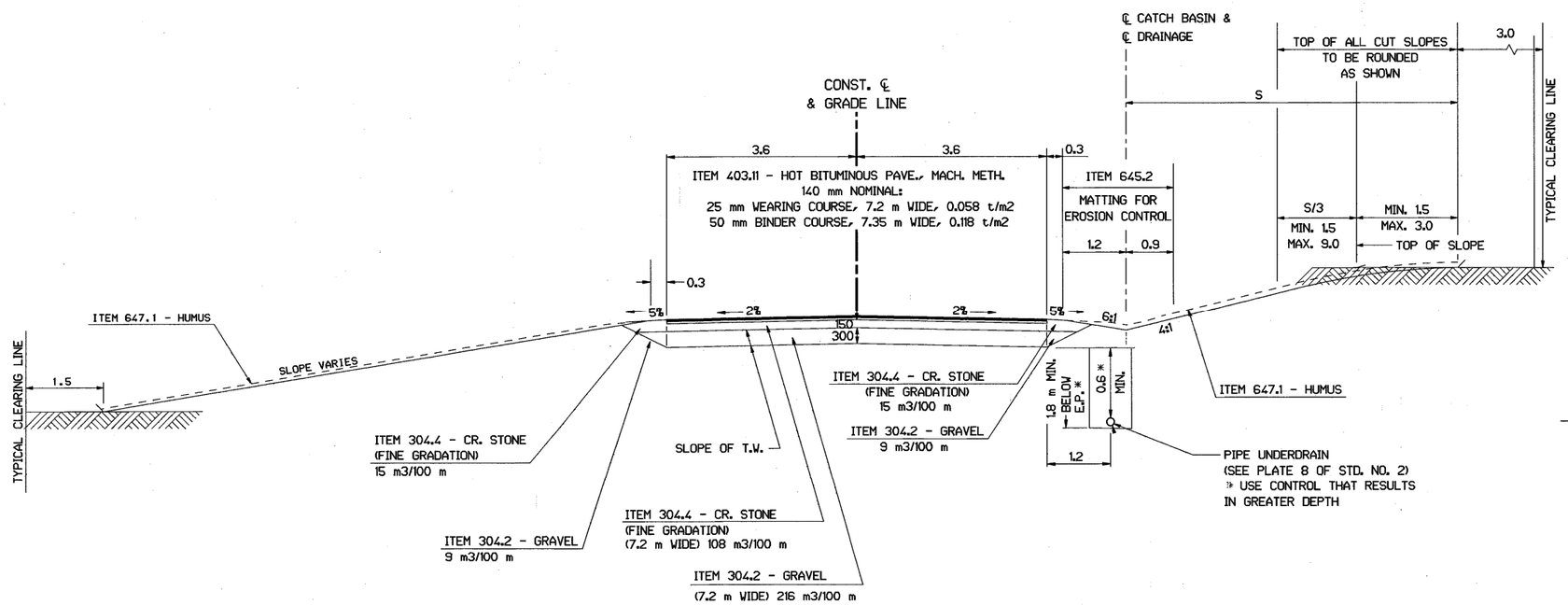
COUNTRY CLUB LANE AND LOOP ROAD

SCALE	REVISION DATE	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
1:50	08-15-96	COUNTLN	TYPICALS	CM-5379(017)	12250	15	282



SUPERELEVATED SECTION

STA. 450+20± - STA. 450+80±



EARTH CUT

GREENLAND ROAD

METRIC

GENERAL NOTES

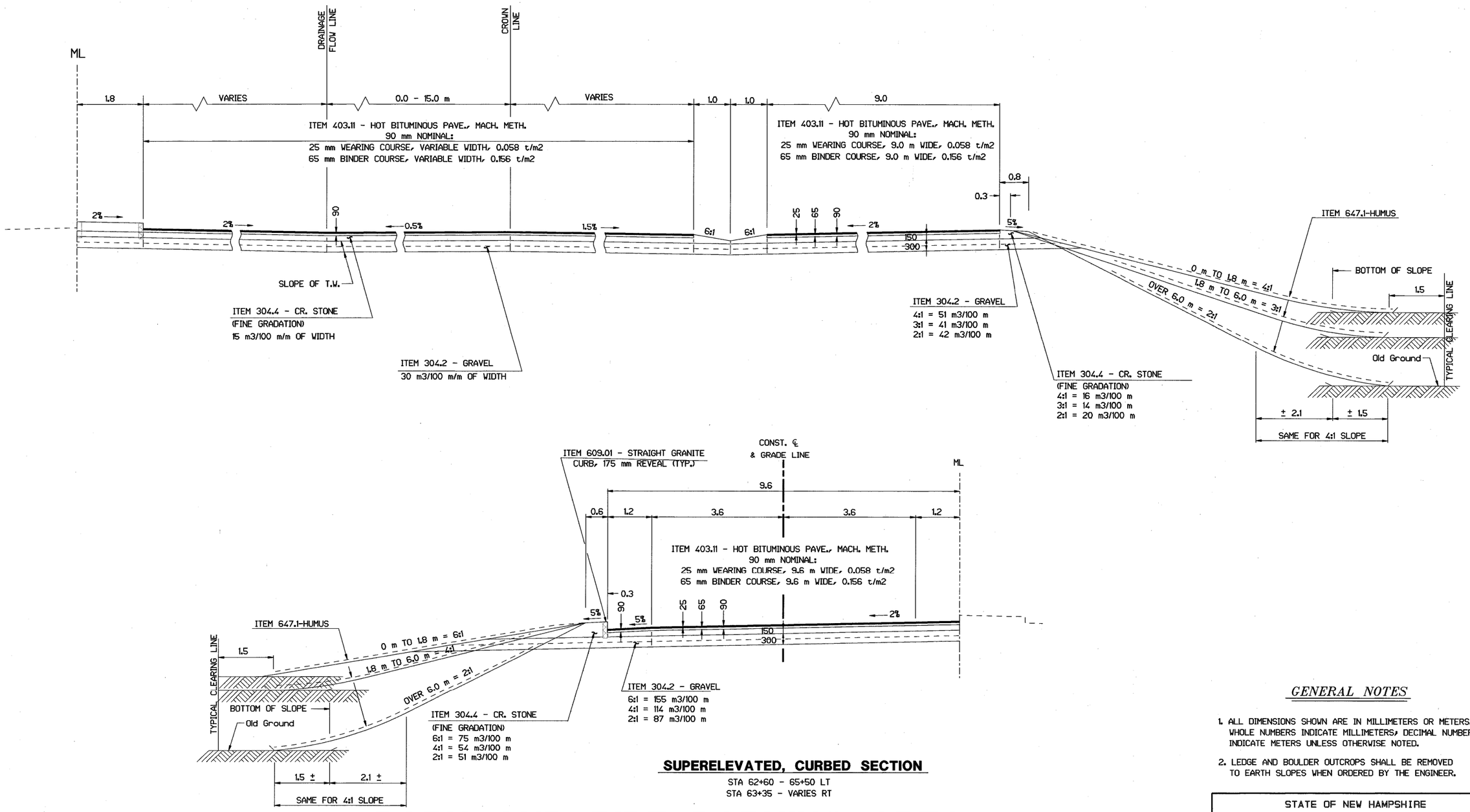
1. ALL DIMENSIONS SHOWN ARE IN MILLIMETERS OR METERS. WHOLE NUMBERS INDICATE MILLIMETERS, DECIMAL NUMBERS INDICATE METERS UNLESS OTHERWISE NOTED.
2. LEDGE AND BOULDER OUTCROPS SHALL BE REMOVED TO EARTH SLOPES WHEN ORDERED BY THE ENGINEER.

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF HIGHWAY DESIGN

GREENLAND ROAD TYPICAL

REVISION DATE	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
08-15-96	TYPGREEN	TYPICALS	CM-5379(017)	12250	16	282



SUPERELEVATED, CURBED SECTION

STA 62+60 - 65+50 LT
STA 63+35 - VARIES RT

PARK AND RIDE PARKING AREA
PERIMETER ROAD

METRIC

GENERAL NOTES

1. ALL DIMENSIONS SHOWN ARE IN MILLIMETERS OR METERS. WHOLE NUMBERS INDICATE MILLIMETERS, DECIMAL NUMBERS INDICATE METERS UNLESS OTHERWISE NOTED.
2. LEDGE AND BOULDER OUTCROPS SHALL BE REMOVED TO EARTH SLOPES WHEN ORDERED BY THE ENGINEER.

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF HIGHWAY DESIGN

PARK AND RIDE TYPICAL

SCALE	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
1:50	PARKDET	TYPICALS	CM-5379(017)	12250	17	282

SUMMARY OF QUANTITIES (ESTIMATE)

THIS INFORMATION IS FOR BIDDING PURPOSES ONLY

CURBING (1)

ITEM NO.			609.21	609.2115	609.22	609.2215	609.23
ITEM	MARK NUMBER	RADIUS	STR. GRANITE SLOPE CURB	STR. GRANITE SLOPE CURB 150 mm HIGH	STR. GRANITE SLOPE CURB W/ RAD. JNTS	STR. GRN. SLOPE CURB W/ RAD. JNTS 150mm HIGH	CURVED GRANITE SLOPE CURB
UNIT			m	m	m	m	m
LOCATION							
450+38 CL - 450+38 LT 0.9	A-1	0.90				2.83	
450+16 CL - 450+38 CL	A-2	60.00		22.50 ✓			
450+16 LT 1.8 - 450+38 LT 1.8	A-3	58.20		~~22.10~~ 22.4			
450+16 CL - 450+16 LT 1.8	A-4	0.90				2.83	
	B-1	1.40				4.40	
105+94 - 106+49 LT 0.6	B-2			~~55.50~~ 55.0			
106+49 - 108+08 LT 0.6	B-3	2500.6		~~154.2~~ 152.7			
108+03 - 108+08 LT 0.6	B-4	685.60		~~4.50~~ 4.0			
	B-5	0.90				2.50	
108+08 LT 2.4 - 107+77 LT 8	B-6	75.00		~~31.80~~ 31.3			
107+77 LT 8 - 106+49 LT 4.8	B-7	2506.20		~~128.50~~ 128.0			
106+49 LT 4.8 - 105+94 LT 3.4	B-8			~~55.0~~ 55.1			
107+98 RT 15 - 400+30 RT 1.9	C-1	15.00	23.40				
400+30 RT 1.9 - 400+71	C-2		38.20				
400+71 RT - 401+16	C-3	100.00	44.70				
401+16 - 402+72	C-4	150	~~151.8~~ 151.5				
402+72 - 17+24 LT 19	C-5	45.00	18.60				
17+73 LT 10.2 - 17+25 LT 10.2	D-1		~~48.30~~ 47.5				
17+25 LT 10.2 - 17+25 LT 11.3	D-2	0.55					~~2.00~~ 1.8
402+85 LT 4.6 - 402+68 LT 4.8	D-3	3231.6	~~17.9~~ 16.1				
402+68 LT 4.8 - 401+16 LT 7.7	D-4	156.70	151.50				
401+16 LT 7.7 - 400+71.04 LT 8.4	D-5	111.40	47.90				
400+71.04 LT 8.4 - 400+20 LT 8.4	D-6		51.30				
400+20 LT 8.4 - 304+14 LT 7.8	D-7	3.00			9.40		
304+14 - 304+00 LT 7.8	D-8		~~14.80~~ 14.0				
304+00 - 302+25 LT 7.8	D-9	147.80	~~184.10~~ 183				
302+25 - 301+87 LT 7.8	D-10		38.40				
301+87 LT 7.8 - 301+69 LT 6.1	D-11		17.1				
301+69 LT 61 - 300+02 LT 7	D-12		168.20				
300+02 LT 7 - 21+98 LT 14	D-13		2.10				
21+98 LT 14 - 21+89 LT 14	D-14		~~9.00~~ 8.8				
22+27 LT 25 - 300+02 RT 1.2	E-1	340.70	30.00				
300+02 RT 1.2 - 300+61	E-2		59.90				
300+61 - 301+45	E-3		82.90				
301+45 - 301+87 RT 4.2	E-4		42.20				
301+87 RT 4.2 - 302+25 RT 4.2	E-5		38.40				
302+25 RT 4.2 - 304+00 RT 4.2	E-6	135.80	~~171.00~~ 170				
304+00 RT 4.2 - 108+60 RT 14	E-7	15	~~24.10~~ 24.7				
108+43 LT 1.8 - 108+43 LT 0.6	F-1	0.90				~~2.80~~ →	2.0
108+43 LT 0.6 - 109+62 LT 0.6	F-2	685.60		~~149.20~~ 117.8			
109+62 LT 0.6 - 111+06 RT 3.0	F-3	684.00		143.80	142.6		
111+06 RT 3 - 111+35 LT 0.9	F-4	679.10		29.00 ✓			
111+35 LT 0.9 - 111+95 LT 0.6	F-5	685.60		~~60.70~~ 60.70			
111+95 LT 0.6 - 112+60 LT 0.6	F-6	270.60		~~64.90~~ 64.9			
112+60 LT 0.6 - 112+60 LT 3.1	F-7	1.20				3.80	
112+60 LT 3.1 - 111+42 LT 6.1	F-8	642.60		~~119.60~~ 117.9			
111+42 LT 6.1 - 110+94 CL	F-9	832.60		48.60	48.9		
110+94 CL - 110 +00 LT 2.8	F-10	687.00		94.30 ✓			
110+00 LT 2.8 - 108+43 LT 1.8	F-11	687.40		157.60			
SUBTOTAL			~~1475.10~~ 1399.3	~~1312.40~~ 1316.40	9.40	19.16	~~2.00~~ 1.8

CURBING (2)

ITEM NO.			609.01	609.02	609.21	609.2115	609.2215
ITEM	MARK NUMBER	RADIUS	STR. GRANITE CURB	CURVED GRANITE CURB	STR. GRANITE SLOPE CURB	STR. GRANITE SLOPE CURB 150 mm HIGH	STR. GRN. SLOPE CURB W/ RAD. JNTS 150mm
UNIT			m	m	m	m	m
LOCATION							
700+16 RT 1.8 - 700+16	G-1	0.90					~~2.90~~ 3.0
700+16 - 700+26	G-2					~~10.20~~ 35.0	
700+26 - 700+86	G-3	500.00				~~59.70~~ 25.0	
700+86 - 700+86 RT 1.8	G-4	0.90					~~2.80~~ 3.0
700+86 RT 1.8 - 700+26 RT 1.8	G-5	501.80				~~50.90~~ 34.7	
700+26 RT 1.8 - 700+16 RT 1.8	G-6					10.20	34.7
500+00 LT 7.6 - 500+45 LT 6.0	H-1				46.30 ✓		
500+45 - 503+07	H-2	306.00			~~267.40~~ 265.8		
503+07 - 503+43	H-3				35.80 ✓		
503+43 - 700+64 RT 9.2	H-4	2.00			4.20	4.2	
500+00 - 500+33	I-1				33.50 ✓		
500+33 - 503+07	I-2	300.00			273.90	271.5	
503+07 - 503+42	I-3				34.80 ✓		
503+42 - 700+83 RT 9	I-4	15.00			15.00 ✓		
62+58 LT 4.8 - 62.70 LT 4.8	J-1	104.80	~~13.70~~	69.5			
62+70 LT 4.8 - 63+30 LT 4.8	J-2		~~59.70~~	69.5			
63+30 LT 4.8 - 65+28 LT 4.8	J-3	126.90	190.40	85.6			
65+28 LT 4.8 - 65+45 LT 5.9	J-4	126.90	~~16.90~~	53.1			
63+34 RT 4.8 - 64+28 RT 4.8	K-1	136.50	~~98.00~~	93.5			
64+28 RT 4.8 - 64+30 RT 6.7	K-2	2.00		~~3.00~~	3.05		
64+30 RT 6.7 - 64+30 RT 11.4	K-3		~~4.80~~	4.6			
64+30 RT 11.4 - 64+28 RT 11.4	K-4	0.90		~~2.00~~	2.35		
64+28 RT 11.4 - 64+28 RT 6.6	K-5		~~4.80~~	4.75			
64+28 RT 6.6 - 63+52 RT 6.6	K-6	138.30	~~80.00~~	81.0			
64+41 RT 4.8 - 64+81 RT 4.8	L-1	136.50	~~41.40~~	43.5			
64+81 RT 4.8 - 64+87 RT 6.9	L-2	2.00		~~3.00~~	2.5		
64+82 RT 6.9 - 64+82 RT 11.5	L-3		~~4.70~~	5.3			
64+82 RT 11.5 - 64+81 RT 11.5	L-4	0.90		~~2.80~~	2.7		
64+81 RT 11.5 - 64+81 RT 6.6	L-5		~~4.90~~	4.6			
64+81 RT 6.6 - 64+41 RT 6.6	L-6	138.30	~~42.60~~	43.2			
64+41 RT 6.6 - 64+41 RT 11.5	L-7		~~4.90~~	4.95			
64+41 RT 11.5 - 64+39 RT 11.5	L-8	0.90		~~2.80~~	2.75		
64+39 RT 11.5 - 64+39 RT 6.8	L-9		~~4.70~~	5.1			
64+39 RT 6.8 - 64+41 RT 4.8	L-10	2.00		3.10			
64+94 RT 4.8 - 65+36 RT 4.8	M-1	136.50	~~43.50~~	44.7			
65+36 RT 4.8 - 65+44 RT 9	M-2	7.50	~~9.20~~	8.3			
65+44 RT 13.9 - 81+96 LT 21.4	M-3		~~4.90~~	4.6			
81+96 LT 21.4 - 81+94 LT 21.4	M-4	0.90		~~2.80~~	2.75		
81+94 LT 21.4 - 81+94 LT 26.2	M-5		~~4.90~~	4.65			
81+94 LT 26.2 - 81+45 LT 26.2	M-6		~~49.40~~	43.9			
81+45 LT 26.2 - 81+45 LT 21.4	M-7		~~4.90~~	4.9			
81+45 LT 21.4 - 81+43 LT 21.4	M-8	0.90		~~2.80~~	2.9		
81+43 LT 21.4 - 64+92 RT 7.3	M-9		~~11.70~~	11.1			
64+92 RT 7.3 - 64+94 RT 4.8	M-10	2.00		~~3.70~~	3.2		
SUBTOTAL			~~700.00~~ 673.65	~~26.90~~ 26.43	~~740.00~~ 706.7	~~140.00~~ 139.40	~~5.80~~ 6.00

CURBING (3)

ITEM NO.			609.01	609.02	609.21	609.5	609.811	
ITEM	MARK NUMBER	RADIUS	STR. GRANITE CURB	CURVED GRANITE CURB	STR. GRANITE SLOPE CURB	RESET GRANITE CURB	BITUMINOUS CURB	
UNIT			m	m	m	m	m	
LOCATION								
81+43 LT 12 - 81+45 LT 12	N-1	0.90		2.80	9.95			
81+45 LT 12 - 81+45 LT 7.2	N-2		~~4.90~~	4.75				
81+45 LT 7.2 - 81+69 LT 7.2	N-3		~~24.80~~	39.55				
81+69 LT 7.2 - 81+69 LT 5.4	N-4		~~1.80~~	175.00				
81+69 LT 5.4 - 81+45 LT 5.4	N-5		~~24.10~~	21.7				
81+45 LT 54 - 81+43 LT 7.9	N-6	2.50		~~3.90~~	4.0			
81+43 LT 7.9 - 81+43 LT 12	N-7		~~4.20~~	4.1				
81+72 LT 7.2 - 81+94 LT 7.2	O-1		~~21.90~~	22.8				
81+94 LT 7.2 - 81+94 LT 12.1	O-2		~~4.90~~	4.55				
81+94 LT 12.1 - 81+96 LT 12.1	O-3	0.90		~~2.80~~	2.85			
81+96 LT 12.1 - 81+96 LT 7.9	O-4		~~4.10~~	3.90				
81+96 LT 7.9 - 81+93 LT 5.5	O-5	2.50		~~3.90~~	3.80			
81+93 LT 5.5 - 81+72 LT 5.5	O-6		21.20	22.1				
81+72 LT 5.5 - 81+72 LT 7.2	O-7		1.80	—				
65+60 RT 1 - 65+54 RT 2.8	R-1		~~7.40~~	6.0				
65+64 RT 2.8 - 65+53 RT 4	R-2	2.00		~~2.52~~	3.0			
65+53 RT 4 - 65+53 RT 12.5	R-3		8.15					
65+53 RT 12.5 - 65+54 RT 14.5	R-4	2.00		~~3.14~~	3.20			
114+17.5 LT 11.8 - 114+24 LT 10.6	S-1		34.8			~~8.43~~	6.3	
25+30 LT 14.1 - 25+90.5 LT 14.3	S-2					60.30	35.7	
25+90.5 LT 14.3 - 25+90.5 LT 15.8	S-3					~~1.80~~	0.00	
25+90 LT 24.0 - 27+15 LT	S-4					122.50	—	
106+76.3 LT - 700+38.0 LT						~~822.20~~	338	
108+62.0 RT - 110+92.4 RT						~~224.30~~	230.0	
112+52.7 RT - 114+24.0 RT						~~184.70~~	158.0	
352+44.5 LT - 353+80.0 LT						~~143.20~~	0.00	
750+10.8 RT - 750+15.8 RT	T-1				~~8.00~~ 5.0			
750+15.8 RT - 750+40.6 RT	T-2				~~22.40~~ 35.3			
750+40.6 RT - 751+07.1 RT	T-3				~~64.70~~ 35.23			
751+07.1 RT - 751+22.6 RT	T-4				~~16.20~~ 35.34			
750+10.8 LT - 750+23.3 LT	T-5					~~21.00~~ 37.0		
750+23.3 LT - 750+41.0 LT	T-6					~~17.00~~ 65.0		
750+41.0 LT - 750+22.6 LT	T-7					~~82.20~~ 65.0		
SUBTOTAL			~~120.31~~ 151.7	~~19.06~~ 20.03	~~109.70~~ 0.00	~~344.63~~ 406.90	1154.40 706.1	

	CURB 1	CURB 2	CURB 3	SUBTOTAL	RND	TOTAL
ITEM # ITEM						
609.01 STR. GRANITE CURB	0.00	700.00	129.31	829.31	20.69	850
609.02 CURVED GRANITE CURB	0.00	26.90	19.06	45.96	4.04	50
609.21 STR. GRANITE SLOPE CURB	1475.10	710.90	109.70	2295.70	34.30	2330
609.2115 STR. GRANITE SLOPE CURB 150 mm HIGH	1312.40	140.00	0.00	1452.40	27.60	1480
609.22 STR. GRANITE SLOPE CURB W/ RAD. JNTS	9.40	0.00	0.00	9.40	5.60	15
609.2215 STR. GRN. SLOPE CURB W/ RAD. JNTS 150mm	19.16	5.80	0.00	24.96	5.04	30
609.23 CURVED GRANITE SLOPE CURB	2.00	0.00	0.00	2.00	1.00	3
609.5 RESET GRANITE CURB	0.00	0.00	311.53	311.53	8.47	320
609.811 BITUMINOUS CURB	0.00	0.00	1154.40	1154.40	15.60	1170

BOUNDS

ITEM NO.	622.2
ITEM	CONCRETE BOUNDS
UNIT	EA
LOCATION	
NH ROUTE 33	
108+03.47 LT 32 m	1
111+70.00 LT 32 m	1
I95 SOUTHBOUND	
26+36.30 RT 35.41 m	1
I95 SOUTHBOUND OFF RAMP	
500+33.52 RT 9 m	1
500+33.52 RT 15 m	1
503+07.43 RT 9 m	1
SOUTH ACCESS ROAD	
701+08.66 RT 15 m	1
701+08.66 LT 25 m	1
703+00.00 LT 25 m	1
703+60.00 RT 15 m	1
703+89.51 LT 15m	1
703+89.51 RT 15m	1
COUNTRY CLUB LANE/ LOOP ROAD	
60+80.00 RT 60.00m	1
60+80.00 LT 5.00m	1
61+91.78 RT 12 m	1
62+70.91 LT 12 m	1
63+30.61 LT 9 m	1
65+28.17 LT 9 m	1
66+00.00 LT 32.22 m	1
SUBTOTAL	19
ROUNDING	1
TOTAL	20

SURFACING MATERIALS

ITEM NO.	304.1	304.2	304.4	403.11	403.119	403.12	403.99	417	417.19	628.2
ITEM	SAND	GRAVEL	CRUSHED STONE BASE COURSE, FINE GRADATION	HOT BITUMIN. PAVEMENT, MACHINE METHOD	HOT BITUMIN. PAVEMENT, MACHINE METHOD (NIGHT)	HOT BITUMIN. PAVEMENT, HAND METHOD	TEMP. BITUMIN. PAVEMENT	COLD PLANING OF BIT. SURFACES	COLD PLANING OF BIT. SURFACES (NIGHT)	SAWED BITUMIN. PAVEMENT
UNIT	m3	m3	m3	t	t	t	t	m2	m2	m
LOCATION										
NH RTE 33	6801.00	4857.00	5360.00	10737.0		57.89	1087.5	517.92		90.2
I-95 SB	2773.54	1880.64	1212.00		3628.0				1400.0	64.1
EXIT 3A	1938.06	1810.64	403.87	598.0						6.3
EXIT 3B	5475.51	2738.88	714.38	1371.0						
SB ON RAMP	2543.09	1660.50	373.95	643.0			194.7			7.2
SOUTH ACCESS ROAD*	6804.11	4613.00	2362.00	3370.0		104.07		1169.84		33.1
COUNTRY CLUB LANE/	0.00	1985.29	786.06	1019.0		121.10				39.1
LOOP ROAD										
PARKING LOT	0.00	7182.26	3344.68	4942.0						
GREENLAND ROAD	0.00	329.00	182.00	240.0		4.68				11.5
NB OFF RAMP	258.00	235.00	50.00		122.0	8.00			159.6	37.0
FROM SEWER SUMMARY							98.0			
FROM WATER SUMMARY							30.2			
SUBTOTAL	26593.31	27301.21	14808.94	22920.0	3750.0	295.74	1410.4	1687.76	1559.6	288.5
ROUNDING	406.69	698.79	191.06	80.0	25.0	14.26	89.6	62.24	40.4	11.5
TOTAL	27000	28000	15000	23000	3775	310	1500	1750	1600	300

* INCLUDES QUANTITIES FOR SHERBOURNE ROAD, GRAFTON DRIVE, AND CALVIN COURT

FENCING

ITEM NO.	201.6	607.112	607.1129	607.318	607.418
ITEM	CLEARING FOR FENCE LINES	WOVEN WIRE FENCE 1.2m HIGH	POST ASSEMBLIES FOR WOVEN WIRE FENCE 1.2 m HIGH	CHAIN LINK FENCE WITH VINYL-COATED STEEL FABRIC 1.8 METERS HIGH	POST ASSEMBLIES FOR CHAIN LINK FENCE, 1.8 METERS
UNIT	ha	m	EACH	m	EACH
LOCATION					
NH 33					
107+87.6 LT 25.3 - 111+72.6 LT 32	0.04	~~409.5~~ 384.1	~~5.0~~ 3.0		
SOUTH ACCESS ROAD					
700+93.4 RT 15 - 26+37.7 LT 44.7				~~410.0~~ 514.0	~~7.0~~ 9.0
SUBTOTAL	0.04	409.5	5.0	410.0	7.0
ROUNDING	0.06	10.5	1.0	5.0	3.0
TOTAL	~~0.10~~ 0.00	~~420.0~~ 384.1	~~6.0~~ 3.00	~~415.0~~ 514.0	~~10.0~~ 9.0

REMOVING TREES

ITEM NO.	201.21	201.22
ITEM	REMOVING SMALL TREES	REMOVING LARGE TREES
UNIT	EA	EA
LOCATION		
EXIT 3A		
501+08 RT 22		1
EXIT 3B		
303+40.18 LT 17.93	1	
303+42.73 LT 16.88	1	
303+45.59 LT15.64	1	
SOUTH ACCESS ROAD		
708+70.11 RT 16.31	1	
708+99.28 RT 17.77	1	
709+05.32 RT 0.20	1	
709+05.91 RT 3.76	1	
709+11.4 LT 7.19	1	
709+11.4 LT 8.00	1	
709+21.20 RT 10.29	1	
709+32.82 LT 1.44	1	
709+42.18 RT 0.57	1	
709+53.97 RT 10.97	1	
709+60.17 RT 4.02	1	
709+70.49 RT 7.75	1	
709+70.53 RT 12.49	1	
SUBTOTAL	16	1
ROUNDING	1	0
TOTAL	17	1

FORCE ACCOUNT WORK BY UTILITIES

(NOT PART OF THIS CONTRACT)
STATE OF NH (SIGNS, SIGNALS (INCL. LED'S), & PAVEMENT MARKINGS)
STATE OF NH (SHOP INSPECTION OF OVERHEAD SIGN STRUCTURES)
NORTHERN UTILITIES (GAS SERVICE TO BUS TERMINAL)
PUBLIC SERVICE OH NH (LIGHTING)
GRANITE STATE GAS TRANSMISSION (GAS LINE RELOCATION)

AS-BUILT TOTALS

STATE OF NEW HAMPSHIRE
DEPT. OF TRANS. BUREAU HIGHWAY DESIGN

SUMMARY OF QUANTITIES (ESTIMATE)

THIS INFORMATION IS FOR BIDDING PURPOSES ONLY

LIGHTING AND CONDUIT

	ITEM NO.	614.511	614.515	614.522	614.70528	614.70814	614.70818	614.70824	614.70828	614.71014	625.22	625.25	625.52	625.55	626
	ITEM	CONCRETE PULL BOX 350 mm	CONCRETE PULL BOX 2.1m X 1.5m	MOLDED PULL BOX	2 DUCT 50 mm PVC PLASTIC CONDUIT, SCHEDULE 40, INCL. SPEC. EXC.	75 mm PVC PLASTIC CONDUIT, SCHEDULE 40, INCL. SPEC. EXC.	75 mm PVC PLASTIC CONDUIT, SCHEDULE 80, INCL SPEC. EXC.	2 DUCT 75 mm PVC PLASTIC CONDUIT, SCHEDULE 40, INCL. SPEC. EXC.	2 DUCT 75 mm PVC PLASTIC CONDUIT, SCHEDULE 80, INCL SPEC. EXC.	100 mm PVC PLASTIC CONDUIT, SCHEDULE 40, INCL SPEC. EXC.	CONCRETE LIGHT POLE BASES, TYPE B (FOR HIGHWAY LIGHTING)	CONCRETE LIGHT POLE BASES, TYPE B (600mm REVEAL)	LIGHT POLE (HIGHWAY)	ORNAMENTAL LIGHT POLE	TRANSFORMER PADS
	UNIT	EA	EA	EA	m	m	m	m	m	m	EACH	EACH	EACH	EACH	EACH
NO.	LIGHTING														
1-2	61+38.0 LT 11.45 - 61+85.5 LT 7.0			2			~~47.8~~ 45.6				1.0		1.0		
2-3	61+85.5 LT 7.0 - 61+85.5 RT 8.0			1			~~15.1~~ 15.8								
3-4	61+85.5 RT 8.0 - 61+76.7 RT 22.0			1		~~16.2~~ 15.4					1.0		1.0		
3-5	61+85.5 RT 8.0 - 62+49.0 RT 8.0			1		~~58.5~~ 60.0									
5-6	62+49.0 RT 8.0 - 63+10.3 RT 8.0			1		~~59.6~~ 58.7									
6-8	63+10.3 RT 8.0 - 63+35.7 RT 8.7			1			~~25.7~~ 28.0								
7-8	63+43.6 RT 23.0 - 63+35.7 RT 8.7			1			~~16.9~~ 18.5					1.0		1.0	
8-9	63+35.7 RT 8.7 - 63+27.3 LT 6.1			1			~~17.2~~ 17.3					1.0		1.0	
8-11	63+35.7 RT 8.7 - 63+96.2 RT 20.9			1			~~67.9~~ 63.3								
10-11	8+85.2 RT 0.5 - 63+96.2 RT 20.9			1			19.0					1.0		1.0	
11-12	63+96.2 RT 20.9 - 64+13.6 LT 5.8			1			~~24.4~~ 23.0					1.0		1.0	
11-14	63+96.2 RT 20.9 - 8+23.6 RT 28.5			1			61.8 60.6					1.0		1.0	
13-14	8+20.8 LT 17.9 - 8+23.6 RT 28.5			1			~~46.5~~ 48.8					1.0		1.0	
14-15	8+23.6 RT 28.5 - 80+67.4 RT 15.5			1			~~39.6~~ 40.0								
16-15	80+50.1 RT 25.5 - 80+67.4 RT 15.5			1			~~20.1~~ 19.3					1.0		1.0	
16-UR	80+50.1 RT 25.5 - 81+44.7 RT 21.7				~~94.0~~ 95.7										
15-17	80+67.4 RT 15.5 - 501+76.2 RT 8.8			1			~~38.0~~ 41.5								
15-18	80+67.4 RT 15.5 - 81+05.5 RT 13.6			1			~~38.1~~ 37.7					1.0		1.0	
18-20	81+05.5 RT 13.6 - 81+32.8 LT 22.6			1			~~45.3~~ 47.0								
20-19	81+32.8 LT 22.6 - 64+61.6 RT 5.7			1			~~30.8~~ 29.4					1.0		1.0	
20-21	81+32.8 LT 22.6 - 64+98.8 RT 9.9			1			~~17.3~~ 17.0					1.0		1.0	
21-22	64+98.8 RT 9.9 - 65+37.1 RT 7.1			1			~~40.3~~ 41.0					1.0		1.0	
22-23	65+37.1 RT 7.1 - 65+54.5 RT 6.8			1			17.4 [illegible]								
23-24	65+54.5 RT 6.8 - 82+48.0 LT 15.2			1			~~43.5~~ 42.1					1.0		1.0	
24-25	82+48.0 LT 15.2 - 82+49.3 RT 14.4			1			~~29.6~~ 30					1.0		1.0	
33-34	113+56.4 LT 18.0 - 113+05.1 LT 19.5			2				~~51.3~~ 61.6			2.0		2.0		
34-35	113+05.1 LT 19.5 - 112+88.7 LT 20.3			1				~~16.4~~ 10.3							
35-36	112+88.7 LT 20.3 - 112+56.1 LT 19.3			1					~~32.6~~ 37.3						
36-37	112+56.1 LT 19.3 - 700+44.0 LT 11.5			1		25.1 24.1					1.0		1.0		
37-38	700+44.0 LT 11.5 - 700+93.5 LT 10.6			1		49.5 45.4					1.0		1.0		
36-39	112+56.1 LT 19.3 - 112+55.4 RT 17.1			1					36.4 40.3						
39-PP	112+55.4 RT 17.1 - 112+64.5 RT 20.6					8.5 7.0									
39-MP	112+55.4 RT 17.1 - 112+53.8 RT 19.5					2.9 2.5									
MP-CC	112+53.8 RT 19.5 - 112+56.1 RT 21.8					~~2.9~~ 0.0									
39-40	112+55.4 RT 17.1 - 112+24.1 RT 15.8			1					~~31.7~~ 29.1		1.0		1.0		
40-41	112+24.1 RT 15.8 - 111+71.3 RT 17.6			1		~~8.7~~ 51.5					1.0		1.0		
41-42	111+71.3 RT 17.6 - 111+22.0 RT 17.1			1		~~49.3~~ 43.5									
42-43	111+22.0 RT 17.1 - 111+21.5 LT 18.8			1			35.9				1.0		1.0		
44-45	113+25.0 RT 15.0 - 113+84.9 RT 12.5			2		~~59.9~~ 55.0									
45-46	113+84.9 RT 12.5 - 113+95.9 RT 29.9			1		~~20.1~~ 23.3									
46-47	113+95.9 RT 29.9 - 23+06.6 LT 23.2			1		21.0 24.0									
47-48	23+06.6 LT 23.2 - 22+60.0 LT 23.6			1		~~46.6~~ 40.5					1.0		1.0		
48-49	22+60.0 LT 23.6 - 22+08.0 LT 26.1			1		52.0					1.0		1.0		
49-50	22+08.0 LT 26.1 - 300+39.0 RT 3.0			1		~~47.5~~ 47.0									
50-51	300+39.0 RT 3.0 - 300+38.1 LT 8.8			1			~~14.9~~ 12.7				1.0		1.0		
52-53	109+15.5 LT 22.0 - 108+65.8 LT 23.6			2		~~51.4~~ 50.9					2.0		2.0		
53-54	108+65.8 LT 23.6 - 108+14.7 LT 24.2			1		~~53.0~~ 51.9									
54-55	108+14.7 LT 24.2 - 107+93.5 RT 18.6			1					~~47.8~~ 47.0		1.0		1.0		
55-56	107+93.5 RT 18.6 - 107+42.6 RT 17.6			1				~~51.0~~ 51.3			1.0		1.0		
55-TR	107+93.5 RT 18.6 - 107+98.1 RT 25.2					~~8.0~~ 5.6									
TR-MP	107+98.1 RT 25.2 - 108+01.6 RT 22.5					~~4.3~~ 6.0									
TR-57	107+98.1 RT 25.2 - 108+10.1 RT 29.2			1		12.5 10.5									
57-58	108+10.1 RT 29.2 - 108+47.3 RT 29.7			1					~~37.2~~ 34.5		1.0		1.0		
58-59	108+47.3 RT 29.7 - 108+54.3 RT 19.3			1		~~12.3~~ 12.0									
PP-60	106+40.0 RT 19.4 - 106+53.5 RT 18.1					~~13.0~~ 12.6					1.0		1.0		
PP-61	105+94.0 RT 18.0 - 105+83.0 RT 14.6					11.6					1.0		1.0		
62-63	105+01.3 LT 18.2 - 105+07.5 LT 24.1			2		~~8.6~~ 21.7									
63-64	105+07.5 LT 24.1 - 105+30.2 LT 28.5			1		~~23.1~~ [illegible]					1.0		1.0		
64-MP	105+30.2 LT 28.5 - 105+25.8 LT 26.8					~~4.7~~ 1.8									
9A-9B	750+89.5 RT 21.0 - 750+14.0 RT 32.0			2		66.3 61.5					1.0				
[illegible]	[illegible]					86.6									
[illegible]	[illegible]					13.3									
	SUBTOTAL	0	0	57	~~94~~	797.1	~~750.1~~	~~118.7~~	~~185.7~~	0	21	13	20	13	0
					95.7	912.00	152.3	~~190.4~~ 124.6	191.1						

CLEARING AND GRUBBING

ITEM NO.		201.1	
ITEM		CLEARING AND GRUBBING	
UNIT		ha	UNIT
THE AREAS LISTED BELOW ARE SHOWN ON THE PLANS BY LETTER ID's			
LOCATION	DESIGNATED AREAS		
104+22 LT - 105+20 LT	A	166.2	m2
103+89 RT - 104+58 RT	B	87.4	m2
105+03 RT - 105+34 RT	C	115.7	m2
105+84 LT - 106+62 LT	D	341.0	m2
106+20 RT - 106+50 RT	E	158.9	m2
106+70 LT - 107+60 LT	F	115.2	m2
108+02 LT - 108+76 LT	G	141.2	m2
108+80 LT - 111+27 LT	H	883.7	m2
109+33 RT - 111+50 RT	I	5650.0	m2
111+60 RT - 112+20 RT	J	336.9	m2
113+83 LT - 114+17 LT	K	123.9	m2
22+18 LT - 23+16 LT	L	814.9	m2
300+04 RT - 300+62 RT	M	868.7	m2
300+92 RT - 302+87 LT	N	7073.6	m2
302+24 RT - 303+50 RT	O	1515.9	m2
400+43 RT - 401+30 RT	P	605.8	m2
401+35 RT - 402+31 RT	Q	557.4	m2
450+40 RT - 450+60 RT	R	92.0	m2
500+96 LT - 501+29 LT	S	118.9	m2
501+76 LT - 501+84 LT	T	26.8	m2
500+00 RT - 503+45 RT	U	21089.4	m2
700+76 RT - 700+88 RT	V	146.6	m2
701+10 RT - 701+24 RT	W	304.6	m2
64+92 - 65+18 RT	X	159.4	m2
65+10 LT - 66+15 RT	Y	3990.2	m2
703+64 RT - 703+83 RT	Z	121.4	m2
706+03 RT - 706+40 RT	AA	642.5	m2
706+45 RT - 707+35 LT	BB	1281.3	m2
707+15 RT - 708+90 LT	CC	5516.1	m2
709+39 LT - 709+63 LT	DD	73.2	m2
SUB-TOTAL		53118.8	m2
		5.31	ha
ROUND		0.19	
TOTAL		5.5	ha

EARTHWORK

ITEM NO.	UNIT	m3	ITEM TOTAL
	COMMON EXCAVATION IN SECTIONS, INCL. BLDRS. AND PVMT.	130758.37	
	BOULDERS IN SECTIONS	-	
	UNSUITABLE MATERIAL IN CUT SECTIONS	922.60	
	CONCRETE PAVEMENT IN SECTIONS	-	
	COMMON EXCAVATION FOR WETLAND CREATION, INCL. BLDRS.	6736.12	
	BOULDERS IN EXCAVATION FOR WETLAND CREATION	-	
	DRIVE AND APPROACH EXCAVATION (COMMON), INCL. BLDRS.	1602.80	
	COMMON EXCAVATION IN SECTIONS, EXC. BLDRS. & CONC. PVMT	130758.37	
	COMMON EXCAVATION FOR WETLAND CREATION	6736.12	
	MUCK EXCAVATION IN SECTIONS (NOT ITEM 203.4)	-	
	TOPSOIL REMOVED BENEATH FILL SECTIONS	-	
	UNSUITABLE MATERIAL REMOVED BENEATH FILL SECTIONS	-	
	WETLAND SOILS REMOVED FROM FILL SECTIONS	-	
	BITUMINOUS PAVEMENT NOT IN SECTIONS	399.00	
	DRIVE AND APPROACH EXCAVATION (COMMON)	1602.80	
	TOTAL COMMON EXCAVATION	139496.29	
203.1	COMMON EXCAVATION FOR ESTIMATE		142000.00
203.15	UNSUITABLE EXCAVATION (STUMPS)		1000.00
203.4	MUCK EXCAVATION FOR ESTIMATE		2600.00
	COMMON STRUCTURE EXCAVATION	2850.00	
	================================		
	SECTIONS FILL	34965.66	
	DRIVE AND APPROACH FILL	26.60	
	MUCK REPLACEMENT (INCLUDED IN SECTIONS FILL)	-	
	TOTAL FILL	34992.26	
	EMBANKMENT-IN-PLACE	34992.26	
203.6	EMBANKMENT-IN-PLACE FOR ESTIMATE		36000.00

SIGNING

ITEM NO.	ITEM	UNIT	TOTAL
206.1	COMMON STRUCTURE EXCAVATION	m3	427.4*
508	STRUCTURAL FILL	m3	12
520.21	CONCRETE CLASS B, FOOTINGS	m3	230
544	REINFORCING STEEL	kg	10600
	TRAFFIC SIGNS		
615.02	TRAFFIC SIGN TYPE B	m2	7.8
615.022	TRAFFIC SIGN TYPE B, BREAKAWAY	m2	26.3
615.024	RELOCATING TRAFFIC SIGN, TYPE B	U	1
615.03	TRAFFIC SIGN TYPE C	m2	65.1
615.04	TRAFFIC SIGN TYPE AA	m2	320
615.05	TRAFFIC SIGN TYPE BB	m2	6.5
615.06	TRAFFIC SIGN TYPE CC	m2	13.1
	OVERHEAD STRUCTURES		
615.10001	110+80 SPAN LENGTH 39.20m	U	1
615.10002	113+85 SPAN LENGTH 33.20m	U	1
615.10003	302+00 SPAN LENGTH 18.10m	U	1
615.20001	106+55 SPAN LENGTH 17.20m	U	1
615.20002	24+30 SPAN LENGTH 10.30m	U	1
615.20003	701+00 SPAN LENGTH 15.00m	U	1
* TO DRAINAGE SUMMARY			

SIDEWALK

ITEM NO.	608.210	608.215	608.220
ITEM	100mm CONCRETE SIDEWALK	150mm CONCRETE SIDEWALK	200mm CONCRETE SIDEWALK
UNIT	m2	m2	m2
LOCATION			
63+52 RT - 64+30 RT	155.60		
64+39 RT - 64+83 RT	100.60		
81+42.9 LT 81+18 LT	56.50		
81+72.2 LT - 81+95.9 LT	51.00		
700+15 RT -700+87 RT		128.60	
105+92 LT - 108+09 LT		1116.10	
108+42 LT - 112+61 LT		1241.50	
450+14.7 LT - 450+39.0 LT		42.70	
300+01 LT 300+10.5 LT			22.00
402+50 LT - 402+85.5 LT			64.20
MOTORCYCLE PARKING			63.25
SUBTOTAL	363.70	2528.90	149.45
ROUNDING	6.30	11.10	5.55
TOTAL	370	2540	155

EROSION CONTROL / SLOPE PROTECTION

ITEM NO.	593.1	593.22	595.4	645.22	645.23	645.51	645.531	645.7	645.71
ITEM	GEOTEXTILE, WOVEN	MEDIUM STRENGTH GEOTEXTILE, NON-WOVEN	SECONDARY REINFORCING (BIAXIAL GEOGRID)	SLOPE STABILIZATION (STEEPER THAN 2:1)	CHANNEL STABILIZATION	HAY BALES FOR TEMP. EROSION CONTROL	SILT FENCE	EROSION AND SEDIMENT CONTROL MANAGEMENT PLAN	MONITORING EROSION AND SEDIMENT CONTROL
UNIT	m2	m2	m2	m 2	m2	EA	m	U	HR
	10000.0	406.9	3402.5	3335.0	2507.6	1106.0	6982.7	1.0	150.0
SUBTOTAL	10000.0	406.9	3402.5	3335.0	2507.6	1106.0	6982.7	1.0	150.0
ROUNDING	0.0	13.1	97.5	165.0	242.4	94.0	267.3	0.0	0.0
TOTAL	10000	420	3500	3500	2750	1200	7250	1	150

AS-BUILT TOTALS

STATE OF NEW HAMPSHIRE
DEPT. OF TRANS. BUREAU HIGHWAY DESIGN

CM-5379(017)	12250	19	282

SUMMARY OF QUANTITIES (ESTIMATE)

THIS INFORMATION IS FOR BIDDING PURPOSES ONLY

LIGHTING AND CONDUIT

NO.	ITEM NO.	614.511	614.515	614.522	614.70528	614.70814	614.70818	614.70824	614.70828	614.71014	625.22	625.25	625.52	625.55	626
	ITEM	CONCRETE PULL BOX 350 mm	CONCRETE PULL BOX 2.1m X 1.5m	MOLDED PULL BOX	2 DUCT 50 mm PVC PLASTIC CONDUIT, SCHEDULE 40, INCL. SPEC. EXC.	75 mm PVC PLASTIC CONDUIT, SCHEDULE 40, INCL. SPEC. EXC.	75 mm PVC PLASTIC CONDUIT, SCHEDULE 80, INCL SPEC. EXC.	2 DUCT 75 mm PVC PLASTIC CONDUIT, SCHEDULE 40, INCL. SPEC. EXC.	2 DUCT 75 mm PVC PLASTIC CONDUIT, SCHEDULE 80, INCL SPEC. EXC.	100 mm PVC PLASTIC CONDUIT, SCHEDULE 40, INCL SPEC. EXC.	CONCRETE LIGHT POLE BASES, TYPE B (FOR HIGHWAY LIGHTING)	CONCRETE LIGHT POLE BASES, TYPE B (600mm REVEAL)	LIGHT POLE (HIGHWAY)	ORNAMENTAL LIGHT POLE	TRANSFORMER PADS
	UNIT	EA	EA	EA	m			LF	LF	m	EACH	EACH	EACH	EACH	EACH
NO.	SIGNALS														
65-66	104+44.0 RT 12.5 - 104+69.0 RT 12.5	2				25.0									
66-67	104+69.0 RT 12.5 - 104+95.0 RT 12.5	1				~~26.0~~ 24.6									
67-68	104+95.0 RT 12.5 - 105+22.0 RT 12.5	1				~~27.0~~ 27.1									
68-MA	105+22.0 RT 12.5 - 105+25.6 RT 15.0					~~4.3~~ 3.8									
68-69	105+22.0 RT 12.5 - 105+55.1 RT 12.5	1					~~33.1~~ 34.8								
69-MA	105+55.1 RT 12.5 - 105+63.0 RT 14.0					~~8.0~~ 6.7									
68-70	105+22.0 RT 12.5 - 105+22.0 LT 16.5	1					~~29.0~~ 29.7								
70-CC	105+22.0 LT 16.5 - 105+22.9 LT 23.8	1				~~7.4~~ 7.20									
CC-MA	105+22.9 LT 23.8 - 105+19.0 LT 18.0	1				7.0									
CC-MP	105+22.9 LT 23.8 - 105+25.8 LT 26.8					~~4.1~~ 1.0									
CC-71	105+22.9 LT 23.8 - 105+25.0 LT 18.5	1				~~7.4~~ 7.2									
71-72	105+25.0 LT 18.5 - 105+43.1 LT 16.4	1					~~18.2~~ 19.5								
72-73	105+43.1 LT 16.4 - 105+75.0 LT 15.5	1					~~31.9~~ 34.0								
73-MA	105+75.0 LT 15.5 - 105+60.5 LT 21.5					~~15.7~~ 14.3									
73-74	105+75.0 LT 15.5 - 106+03.0 LT 16.0	1				~~28.0~~ 27.7									
74-75	106+03.0 LT 16.0 - 106+25.0 LT 16.5	1				~~22.0~~ 22.1									
75-76	106+25.0 LT 16.5 - 106+40.5 LT 16.9	1				~~15.5~~ 15.9									
77-78	107+29.9 RT 18.0 - 107+40.0 RT 16.2	2				~~10.2~~ 15.4									
78-79	107+40.0 RT 16.2 - 107+62.0 RT 17.0	1						(~~21.9~~) 18.8							
79-80	107+62.0 RT 17.0 - 107+89.3 RT 17.9	1						~~(27.1)~~							
80-CC	107+89.3 RT 17.9 - 107+98.9 RT 20.5					~~9.2~~ 3.8		24.7							
CC-81	107+98.9 RT 20.5 - 107+95.2 RT 18.7	1				~~3.5~~ 2.7			24.5						
81-82	107+95.2 RT 18.7 - 108+05.0 LT 2.0	1							(~~22.0~~ 25.4						
82-83	108+05.0 LT 2.0 - 108+14.5 LT 21.2	1							(~~21.5~~) 22.5						
83-MA	108+14.5 LT 21.2 - 108+16.0 LT 23.4					~~2.7~~ .8									
83-84	108+14.5 LT 21.2 - 108+47.3 LT 21.4	1				~~33.9~~ 32.8									
84-MA	108+47.3 LT 21.4 - 108+47.7 LT 25.4					~~3.9~~ 3.0									
CC-MP	107+98.9 RT 20.5 - 108+01.6 RT 22.5					~~3.3~~									
CC-85	107+98.9 RT 20.5 - 108+09.0 RT 27.9	1				~~12.1~~ 10.6									
85-86	108+09.0 RT 27.9 - 108+28.0 RT 28.7	1							(~~10.0~~) 21.0						
86-87	108+28.0 RT 28.7 - 108+45.7 RT 28.7	1							(~~16.7~~) 13.9						
87-88	108+45.7 RT 28.7 - 108+51.3 RT 18.9	1				~~11.3~~ 13.0									
88-MA	108+51.3 RT 18.9 - 108+54.4 RT 17.8					~~2.8~~ 3.3									
88-89	108+51.3 RT 18.9 - 108+51.7 LT 1.5	1					~~20.3~~ 20.0								
89-90	108+51.7 LT 1.5 - 108+75.9 LT 1.5	1				~~24.3~~ 26.5									
90-91	108+75.9 LT 1.5 - 109+05.9 LT 1.5	1				~~30.0~~ 28.4									
91-92	109+05.9 LT 1.5 - 109+20.0 LT 1.5	1				~~14.0~~ 10.0									
93-94	111+81.6 RT 15.3 - 112+05.0 RT 15.3	2						(~~22.6~~) 18.75							
94-95	112+05.0 RT 15.3 - 112+31.5 RT 15.7	1						(25.0) 31.8							
95-96	112+31.5 RT 15.7 - 112+57.5 RT 16.0	1							(~~24.5~~) 22.5						
96-97	112+57.5 RT 16.0 - 112+85.5 RT 16.5	1				~~26.3~~ 30.0									
97-MA	112+85.5 RT 16.5 - 112+89.0 RT 16.5					~~3.3~~ 1.0									
96-CC	112+57.5 RT 16.0 - 112+54.5 RT 21.7					~~6.3~~ 2.0									
96-MA	112+57.5 RT 16.0 - 112+60.0 RT 18.0					~~3.1~~ 2.7									
96-98	112+57.5 RT 16.0 - 112+57.5 LT 1.9	1							(~~17.9~~) 19.5						
98-99	112+57.5 RT 1.9 - 112+57.5 LT 19.1	1							(~~17.2~~) 19.1						
99-MA	112+57.5 LT 19.1 - 112+54.9 LT 18.0					~~3.3~~ 1.1									
99-1A	112+57.8 LT 19.1 - 112+71.7 LT 18.5	1							(~~15.0~~) 15.1						
1A-2A	112+71.7 LT 18.5 - 112+90.2 LT 19.0	1							(~~10.7~~) 21.5						
2A-3A	112+90.2 LT 19.0 - 113+05.0 LT 18.0	1						(~~15.8~~) 10.8							
3A-4A	113+05.0 LT 18.0 - 113+28.0 LT 17.3	1						(24.5) 31.7							
4A-5A	113+28.0 LT 17.3 - 113+70.0 LT 17.0	1				~~14.8~~		(~~30.3~~) 45.7							
8	750+20.2 RT 9.93	1													
9	750+20.2 RT 9.93 - 750+17.9 LT 3.9					2.2	~~14.0~~ 3.1								
10	750+20.2 RT 9.93 - 750+16.7 RT 12.8					~~4.6~~									
3	750+14.4 LT 13.0 - 750+13.2 LT 16.9					~~4.1~~ 4.2									
	CATV														
PP-27	501+05.8 RT 29.3 - 81+42.1 RT 19.1			1			~~30.7~~ 34.0								
	TELEPHONE														
MH-32	501+85.7 LT 18.8 - 501+86.1 LT 7.9			1		10.9									
32-31	501+86.1 LT 7.9 - 501+85.3 RT 4.8			1			12.7								
31-30	501+85.3 RT 4.8 - 501+81.0 RT 16.9			1		12.8									
30-29	501+81.0 RT 16.9 - 80+86.4 RT 29.5			1			20.2								
29-28	80+86.4 RT 29.5 - 81+42.1 RT 17.6			1			56.9								
							60.3								
	POWER														
PP-26	501+05.8 RT 29.3 - 81+43.6 RT 20.5			1			~~29.4~~ 34.3								
PP-TR	106+40.0 RT 19.4 - 107+98.1 RT 20.5									156.2					1.0
TR-X	107+98.1 RT 20.5 - 401+40.0 RT 5.5		1							108.5					
X-XX	401+40.0 RT 5.5 - 402+61.9 RT 9.0		1							115.0					
					167.5 ADDED	275.7 ADDED	357.3		197.6	(231.6)					
	SHEET SUBTOTAL	43	2	7	0	~~448.1~~ 1200.8	~~296.4~~	~~0~~	0.0	379.7	0	0	0	0	1
	SUBTOTAL FROM PREVIOUS	0	0	57	~~94~~ 95.7	~~797.1~~ 912.0	~~750.1~~ 146.3	118.7 121.25	185.7	0	21	13	20	13	0
	ITEM SUBTOTAL	43	2	64	94	~~1245.2~~	~~1046.5~~	118.7 123.6	185.7	379.7	21	13	20	13	1
						1322			191.00						
	ROUNDING	2	0	2	2	14.8	13.5	6.3	4.3	10.3	0	1	0	1	0
	TOTAL	45	2	66	96	1260	~~1060~~	125	190	390	21	14	20	14	1
					263.2	1607.7	1106.6	305.00	368.70	158.1					

PAVEMENT MARKINGS

ITEM NO.	632.0110	632.0115	632.0130	632.3110	632.3115	632.3130	632.32
ITEM	RETROREFLECTIVE PAVEMENT MARKING, 100mm LINE	RETROREFLECTIVE PAVEMENT MARKING, 150mm LINE	RETROREFLECTIVE PAVEMENT MARKING, 300mm LINE	RETROREFL. THERMO-PLASTIC PAVE. MARKING, 100mm LINE	RETROREFL. THERMO-PLASTIC PAVE. MARKING, 150mm LINE	RETROREFL. THERMO-PLASTIC PAVE. MARKING, 300mm LINE	RETROREFL. THERMO-PLASTIC PVMT. MARK., SYMB. OR WORD
UNIT	m	m	m	m	m	m	m3
LOCATION							
NH RTE 33				6942.50		53.50	85.54
I-95		4093.00	470.00				
EXIT 3A		690.00				123.60	
EXIT 3B		828.00			341.00	175.80	26.36
SB ON RAMP		514.00			51.00	36.00	1.16
SOUTH ACCESS ROAD *	3327.00			309.00		32.70	10.48
COUNTRY CLUB LANE/ LOOP ROAD	804.00			1365.00		16.00	2.32
PARKING LOT/ PERIMETER ROAD				496.00		35.00	19.48
GREENLAND ROAD							4.26
NB OFF RAMP	96.00					11.00	10.48
SUBTOTAL	4227.00	6125.00	470.00	9112.50	392.00	483.60	160.08
ROUNDING	23.00	25.00	10.00	37.50	18.00	6.40	4.92
TOTAL	4250	6150	480	9150	410	490	165

* INCLUDES SHERBOURNE ROAD AND GRAFTON ROAD

GUARD RAIL

ITEM NO.		565.64	565.8	606.140	606.1451	606.147	606.412	621.2
ITEM	GUARDRAIL NOTE NUMBER	BRIDGE APPROACH RAIL E	RESETTING BRIDGE APPROACH RAIL	BEAM GUARD RAIL (STANDARD SECTION - WOOD POSTS) GR-140	BEAM GUARD RAIL (TERMINAL UNIT, MELT) GR-1451	BEAM GUARD RAIL (TERMINAL UNIT TYPE G-2) GR-147	CONCRETE MEDIAN BARRIER, DOUBLE-FACED PRECAST	RETRO-REFLECTIVE BEAM GUARDRAIL DELINEATOR
UNIT		LM	LM	LM	U	U	LM	EA
LOCATION								
106+13.5 - 106+24.4 RT	1				1			
106+24.4 - 106+40.0 RT	2			15.00				
106+40.0 - 107+20.0 RT	3			~~79.50~~ 106.4				3
107+20.0 - 107+31.3 RT	4				1			
106+75.6 - 106+86.9 LT	5				1			
106+86.9 LT - 700+26.7 LT	6			599.70 568.8				6
700+26.7 - 700+38.0 LT	7				1			
303+89.5 - 304+01.0 RT	8				1			
304+01.0 RT - 110+80.0 RT	9			~~244.90~~ 240.0				8
110+80.0 - 110+93.3 RT	10				1			
112+38.0 - 112+49.9 RT	11				1			
112+49.9 - 113+90.0 RT	12			~~140.10~~ 140.3				7
113+74.6 - 113+85.9 LT	13				1			
113+85.9 - 114+13.7 LT	14		~~10.33~~ 10.0	~~27.80~~ 26.7				2
	15		10.0					
23+17.9 - 23+84.0 LT	16						~~66.0~~ 66.15	
23+84.0 - 23+94.0 LT	17	~~10.1~~ 10.0						
23+94.0 - 24+70.0 LT	18			~~38.00~~ 16.0				2
24+70.0 - 24+81.4 LT	19				1			
80+07.0 LT - 80+13.3 RT	20				1			
80+13.3 - 81+20.0 RT	21			~~121.00~~ 110.4				13
81+20.0 - 81+31.4 RT	22				1			
301+63.8 - 301+75.0 LT	23				1			
301+75.0 - 302+10.0 LT	24			35.00 28.00				2
302+10.0 - 302+20.0 LT	25			10.00 13.00				
302+20.0 - 302+23.8 LT	26					1		
SUBTOTAL		10.1	10.33	1311	12	1	66.0	43
ROUNDING		1.9	1.67	19	1	0	4.0	2
TOTAL		12	12	1330	13	1	70	45
		10.0	20.00	1335.4	12	1	66.20	

CONSTRUCTION SIGNS AND WARNING DEVICES

(MINIMUM REQUIREMENTS)

SIGN NUMBER	DESCRIPTION	SIZE	m2	NO. REQ.	TOTAL AREA	POSTS	EASELS	REMARKS
G20-2a	END ROAD WORK	600 x 1200	0.72	9	6.48	18		
R11-2	ROAD (BRIDGE) CLOSED	750 x 1200	0.9	4	3.6			
R50-1	NH LAW WORK ZONE SPEEDING	1200 x 1800	2.16	13	28.08	26		
R200S	UNAUTHORIZED TRAVEL PROHIBITED	600 x 1200	0.72	4	2.88			
W20-1e	ROAD WORK 1/2 MILE	1200 x 1200	1.44	12	17.28	24		
W20-1f	ROAD WORK 1 MILE	1200 x 1200	1.44	6	8.64	12		
	ARROW BOARDS			3				

NOTE: ALL SIGNING MOUNTED ON POSTS SHALL BE CONSIDERED PERMANENT CONTROLS

AS-BUILT PLANS

SUMMARY OF QUANTITIES (ESTIMATE)

THIS INFORMATION IS FOR BIDDING PURPOSES ONLY

LANDSCAPING

	ITEM NO.	641	642	643.12	643.22	644.15	644.44	644.6	644.770	644.82	644.912	644.95	645.11	647.1
	ITEM	LOAM	LIMESTONE	FERTILIZER FOR INITIAL APPLICATION	FERTILIZER FOR REFERTILI-ZATION	PARK SEED TYPE 15	SLOPE SEED TYPE 44	CROWN-VETCH SEED	WETLAND SEED MIX	SALT-TOLERANT GRASS SEED TYPE 82	WILDFLOWER ESTABLISH. (WILDFLOWERS, STRAW, MULCH AND COMPOST)	WILDFLOWER AREA SIGN	MULCH	HUMUS
	UNIT	m3	t	t	t	kg	kg	kg	kg	kg	m2	EA	ha	m3
AA	63+32 RT - 64+30 RT	55.2	0.25	0.0359	0.0447	7.4							0.0552	
BB	64+39 RT - 64+83 RT	10.1	0.05	0.0065	0.0082	1.4							0.0101	
CC	64+91 RT - 65+44 RT	30.1	0.14	0.0196	0.0244	4.1							0.0301	
DD	64+91 RT - 65+18 RT	5.8	0.03	0.0038	0.0047	0.8							0.0058	
EE	65+20 RT - 65+44 RT	5.1	0.02	0.0033	0.0041	0.7							0.0051	
FF	81+39 RT - 81+82 RT	31.7	0.14	0.0206	0.0257	4.3							0.0317	
GG	81+55.5 RT - 81+62.5 RT	4.3	0.02	0.0028	0.0035	0.6							0.0043	
HH	81+72.5 RT - 82+04 RT	37.4	0.17	0.0243	0.0303	5.1							0.0374	
II	50+21.5 LT - 51+00 LT	79.6	0.36	0.0518	0.0645	10.7							0.0796	
JJ	101+50 LT - 105+20 LT		1.34	0.1939	0.2416		26.8						0.2982	268.4
KK	101+50 RT - 105+35 RT		1.59	0.2302	0.2868		31.9						0.3541	318.7
LL	105+35 LT - 60+63 LT		3.52	0.5088	0.6341		70.5						0.7828	704.5
MM	105+51 RT - 106+62 RT		0.05	0.0070	0.0088		1.0						0.0108	9.7
NN	106+10 RT - 402+80 RT		1.80	0.2597	0.3236		36.0						0.3995	359.6
OO	17+24 LT - 21+88 RT		3.11	0.4488	0.5593		62.1						0.6905	621.5
PP	108+43 RT - 114+36 RT		4.21	0.6075	0.7571		84.1						0.9347	841.2
QQ-XX	500+00 LT -503+52 LT		2.11	0.3047	0.3797		42.2						0.4687	526.9
RR-YY	500+00 RT - 61+62 RT		8.35	1.2055	1.5023		166.9						1.8546	
RR-ZZ	500+00 RT - 61+62 RT									2.50				
RR-AAA	500+00 RT - 61+62 RT									2.60				2159.1
SS	703+80 RT - COUNTRY CLUB LN		0.28	0.0404	0.0503		5.6						0.0621	55.9
TT	60+60 RT - 61+47 LT		0.29	0.0423	0.0527		5.9						0.0651	58.6
WETLAND			7.19	1.0387	1.2943				15.00				1.5979	
UU	8+56 LT - 9+30 LT									1.60				14.6
VV	80+76 RT - 8+47 LT									2.50				22.6
WW	80+85 RT - 81+39 RT									1.20				11.0
XX	502+64 LT - 503+32 LT									11.80				
YY	502+68 RT - 702+95 RT									49.90				
BBB	106+40 RT - 107+40 RT							0.50						
CCC	106+80 LT - 112+00 LT							2.80						
DDD	108+80 RT - 110+60 RT							0.90						
EEE	113+00 RT - 113+40 RT							0.20						
FFF	501+80 RT - 502+40 RT							0.60						
GGG	750+10.8 RT - 751+22.6 RT		0.18	0.0260	0.0324		3.60						0.0400	36.0
HHH	750+10.8 LT - 751+22.6 LT		0.18	0.0260	0.0324		3.60						0.0400	36.0
W-1	PARKING LOT										210.00	2.00		
	PAVEMENT REMOVAL AREAS		1.20	0.1730	0.2160		24.00						0.2661	240.0
	SUBTOTAL	259.3	36.58	5.2810	6.5814	35.1	564.20	5.00	15.00	72.10	210.00	2.00	8.12457	6284.3
	ROUNDING	10.7	0.42	0.7190	0.4186	2.9	10.80	1.00	0.00	2.90	0.00	0.00	0.17543	55.7
	TOTAL	270	37	6	7	38	575	6	15	75	210	2	8.3	6340

INCIDENTAL ITEMS

ITEM NO.	ITEM	UNIT	TOTAL
201.711	SELECTIVE CLEARING	m2	180
202.201	DEMOLISHING BUILDINGS	U	1.
202.202	DEMOLISHING BUILDINGS	U	1.
202.203	DEMOLISHING BUILDINGS	U	1.
206.19	COMMON STRUCTURE EXCAVATION EXPLORATORY	m3	20.
209.4	GRANULAR BACKFILL (GRAVEL)	m3	2350.
214	FINE GRADING	U	1.
304.35	CRUSHED GRAVEL FOR DRIVES	m3	500.
503.201	COFFERDAMS	U	1.
503.202	COFFERDAMS	U	1.
503.203	COFFERDAMS	U	1.
510.1	PILE DRIVING EQUIPMENT	U	1.
510.61	FURNISHING AND DRIVING STEEL BEARING PILES	kg	5900.
510.65	DRIVING POINTS FOR STEEL BEARING PILES	EA	12.
582.9	RESET SLOPE PAVING	m2	310.
604.85	WATER REPELLANT FOR EXISTING CB'S AND DI'S	EA	12.
606.417	PORTABLE CONCRETE BARRIER FOR TRAFFIC CONTROL	LM	1000.
616.101	TRAFFIC SIGNALS	U	1.
616.102	TRAFFIC SIGNALS	U	1.
616.103	TRAFFIC SIGNALS	U	1.
616.161	TRAFFIC SIGNALS (TEMP.)	U	1.
616.191	ALTERATIONS TO TRAFFIC SIGNALS	U	1.
618.61	UNIFORMED OFFICERS WITH VEHICLE	$	1.
618.7	FLAGGERS	HR	4500.
619.1	MAINTENANCE OF TRAFFIC	U	1.
619.25	PORTABLE CHANGEABLE MESSAGE SIGN	U	4.
621.3	SINGLE DELINEATOR WITH POST	EA	360.
622.1	STEEL WITNESS MARKERS	EA	50.
660.75	BUILDING	U	1.
670.045	CONSTRUCT AND REMOVE DETOURS	U	1.
670.066	MAILBOX POST ASSEMBLIES	EA	1.
692	MOBILIZATION	U	1.
693	ON-THE-JOB TRAINING OF UNSKILLED WORKERS	$	1.
698.11	FIELD OFFICE TYPE A	U	1.
698.2	PHYSICAL TESTING LABORATORY	U	1.
699	TEMPORARY PROJECT WATER POLLUTION CONTROL	$	1.
1008.1	ALTERATIONS AND ADDITIONS AS NEEDED, TEMPORARY LIGHTING	$	1.
1009	MISCELLANEOUS LANDSCAPE TREATMENT	$	1.

SEWER

ITEM NO.	206.1	403.11	612.31	612.73520
ITEM	COMMON STRUCTURE EXCAVATION	HOT BITUMINOUS PAVEMENT, MACHINE METHOD	PRECAST CONCRETE MANHOLE	200mm PVC SEWER PIPE SDR 35
UNIT	m3	t	EACH	m
SEWER LINE	880.0		5.0	283.0
TRENCH PATCH ON COUNTRY CLUB LANE		54.8		
COUNTRY CLUB LANE/ SHERBOURNE ROAD OVERLAY		43.2		
SUBTOTAL	880.0	98.0	5.0	283.0
ROUNDING			0.0	0.0
TOTAL	880*	98.0**	5.0	283.0

* TO DRAINAGE SUMMARY
** TO SURFACING MATERIALS SUMMARY

SALVAGED MATERIALS

DESCRIPTION	
DRAINAGE STRUCTURE GRATES AND FRAMES (NH RTE 33)	DISTRICT 6
DRAINAGE STRUCTURE GRATES AND FRAMES (i-95 AND RAMPS)	BUREAU OF TURNPIKES
BEAM GUARD RAIL	DISTRICT 6
EXISTING SIGNS , POSTS, AND HARDWARE	BUREAU OF TRAFFIC

SUBSIDIARY ITEMS

DESCRIPTION
SAWCUT (LONGITUDINAL) - SUBSIDIARY TO ITEM 203.1 (COMMON EXCAVATION)
SALVAGE OF MATERIALS - SEE SALVAGE OF MATERIALS SUMMARY
FOR SUBSIDIARY DRAINAGE WORK SEE DRAINAGE SUMMARY COMMENTS
NOTE: THIS LIST SHOULD NOT BE CONSIDERED A COMPLETE LIST OF SUBSIDIARY WORK PRESENT IN THE PROJECT. REFER ALSO TO THE PLANS, PROPOSAL, SPECIAL PROVISIONS, AND TO THE STANDARD SPECIFICATIONS.

PLANTINGS

ITEM NO.	ITEM	UNIT	TOTAL
651.34041	WHITE SPRUCE 1.3m B&B	EA	25.
651.61081	RED PINE 2.5m B&B	EA	27.
652.06030	RED MAPLE 1.0m CONT. GROWN	EA	50.
652.68701	PIN OAK 75mm CAL. B&B	EA	3.
653.02046	AMUR MAPLE 1.3m CLUMP B&B	EA	7.
653.23701	CRIMSON CLOUD HAWTHORN 75mm CAL. B&B	EA	5.
653.29701	WINTER KING HAWTHORN 75mm CAL. B&B	EA	3.
654.31400	HETZ JUNIPER 0.6m SPREAD CONT. GROWN	EA	33.
655.01040	SPECKLED ALDER 0.8m CONT. GROWN	EA	100.
655.27020	SUMMERSWEET 0.5m CONT. GROWN	EA	16.
655.33040	SILKY DOGWOOD 0.8m CONT. GROWN	EA	71.
655.37020	GRAY DOGWOOD 0.5m CONT. GROWN	EA	16.
655.72040	COMMON WITCH-HAZEL 0.8m CONT. GROWN	EA	50.
655.80040	COMMON WINTERBERRY HOLLY 0.8m CONT. GROWN	EA	75.
655.82050	DOUBLE JAPANESE KERRIA 0.9m CONT. GROWN	EA	34.
656.43040	PINK RUGOSA ROSE 0.8m CONT. GROWN	EA	30.
656.48040	PUSSY WILLOW 0.8m CONT. GROWN	EA	75.
656.62061	PERSIAN LILAC 1.3m B&B	EA	15.
656.67061	COMMON LILAC 1.3m B&B	EA	10.
656.82040	ARROWWOOD 0.8m CONT. GROWN	EA	75.
656.85071	WAYFARINGTREE VIBURNUM 1.5m B&B	EA	14.
656.86061	NANNYBERRY 1.3m B&B	EA	8.
658.2655	HAY SCENTED FERN 2 LITER CONTAINER GROWN	EA	51.

WATERLINE

PARTICIPATING

ITEM NO.	ITEM	UNIT	TOTAL	
202.43	REMOVAL OF EXISTING ASBESTOS CEMENT PIPE 0-600mm DIA	LM	145	
403.99	TEMPORARY PAVEMENT	t	30.2	*
611.23006	600 mm STEEL PIPE SLEEVE	LM	81	
611.05220	200 mm CEMENT LINED DUCTILE IRON WATER PIPE CL. 52	LM	112	
611.05225	250 mm CEMENT LINED DUCTILE IRON WATER PIPE CL. 52	LM	126	
611.05230	300 mm CEMENT LINED DUCTILE IRON WATER PIPE CL. 52	LM	639	
611.05215	150 mm CEMENT LINED DUCTILE IRON WATER PIPE CL. 52	LM	145	
611.703	SERVICE CONNECTIONS	EA	1	
611.71030	300 mm GATE VALVE	EA	3	
611.74003	POLYETHYLENE ENCASEMENT	LM	282	
611.81	HYDRANTS	EA	2	
611.811	RELOCATING HYDRANTS	EA	1	

NON- PARTICIPATING

ITEM NO.	ITEM	UNIT	TOTAL
611.23006	600 mm STEEL PIPE SLEEVE	LM	54
611.05230	300 mm CEMENT LINED DUCTILE IRON WATER PIPE CL. 52	LM	120
611.703	SERVICE CONNECTIONS	EA	1
611.71030	300 mm GATE VALVE	EA	2
611.74003	POLYETHYLENE ENCASEMENT	LM	22
611.811	RELOCATING HYDRANTS	EA	1

* TO SURFACING MATERIALS SUMMARY

Shading represents item change

STATE OF NEW HAMPSHIRE
DEPT. OF TRANS. BUREAU HIGHWAY DESIGN

CM-5379(017)	12250	21	282

SUMMARY OF QUANTITIES (ESTIMATE)

THIS INFORMATION IS FOR BIDDING PURPOSES ONLY

LANDSCAPING

	ITEM NO.	641	642	643.12	643.22	644.15	644.44	644.6	644.770	644.82	644.912	644.95	645.11	647.1
	ITEM	LOAM	LIMESTONE	FERTILIZER FOR INITIAL APPLICATION	FERTILIZER FOR REFERTILI-ZATION	PARK SEED TYPE 15	SLOPE SEED TYPE 44	CROWN-VETCH SEED	WETLAND SEED MIX	SALT-TOLERANT GRASS SEED TYPE 82	WILDFLOWER ESTABLISH. (WILDFLOWERS, STRAW MULCH AND COMPOST)	WILDFLOWER AREA SIGN	MULCH	HUMUS
	UNIT	m3	t	t	t	kg	kg	kg	kg	kg	kg	EA	ha	m3
AA	63+32 RT - 64+30 RT	55.2	0.25	0.0359	0.0447	7.4							0.0552	
BB	64+39 RT - 64+83 RT	10.1	0.05	0.0065	0.0082	1.4							0.0101	
CC	64+91 RT - 65+44 RT	30.1	0.14	0.0196	0.0244	4.1							0.0301	
DD	64+91 RT - 65+18 RT	5.8	0.03	0.0038	0.0047	0.8							0.0058	
EE	65+20 RT - 65+44 RT	5.1	0.02	0.0033	0.0041	0.7							0.0051	
FF	81+39 RT - 81+82 RT	31.7	0.14	0.0206	0.0257	4.3							0.0317	
GG	81+55.5 RT - 81+62.5 RT	4.3	0.02	0.0028	0.0035	0.6							0.0043	
HH	81+72.5 RT - 82+04 RT	37.4	0.17	0.0243	0.0303	5.1							0.0374	
II	50+21.5 LT - 51+00 LT	79.6	0.36	0.0518	0.0645	10.7							0.0796	
JJ	101+50 LT - 105+20 LT		1.34	0.1939	0.2416		26.8						0.2982	268.4
KK	101+50 RT - 105+35 RT		1.59	0.2302	0.2868		31.9						0.3541	318.7
LL	105+35 LT - 60+63 LT		3.52	0.5088	0.6341		70.5						0.7828	704.5
MM	105+51 RT - 106+62 RT		0.05	0.0070	0.0088		1.0						0.0108	9.7
NN	106+10 RT - 402+80 RT		1.80	0.2597	0.3236		36.0						0.3995	359.6
OO	17+24 LT - 21+88 RT		3.11	0.4488	0.5593		62.1						0.6905	621.5
PP	108+43 RT - 114+36 RT		4.21	0.6075	0.7571		84.1						0.9347	841.2
QQ-XX	500+00 LT -503+52 LT		2.11	0.3047	0.3797		42.2						0.4687	526.9
RR-YY	500+00 RT - 61+62 RT		8.35	1.2055	1.5023		166.9						1.8546	
RR-ZZ	500+00 RT - 61+62 RT									2.50				
RR-AAA	500+00 RT - 61+62 RT									2.60				2159.1
SS	703+80 RT - COUNTRY CLUB LN		0.28	0.0404	0.0503		5.6						0.0621	55.9
TT	60+60 RT - 61+47 LT		0.29	0.0423	0.0527		5.9						0.0651	58.6
WETLAND			7.19	1.0387	1.2943				15.00				1.5979	
UU	8+56 LT - 9+30 LT									1.60				14.6
VV	80+76 RT - 8+47 LT									2.50				22.6
WW	80+85 RT - 81+39 RT									1.20				11.0
XX	502+64 LT - 503+32 LT									11.80				
YY	502+98 RT - 702+98 RT									49.90				
BBB	106+40 RT - 107+40 RT							0.50						
CCC	106+80 LT - 112+00 LT							2.80						
DDD	108+80 RT - 110+60 RT							0.90						
EEE	113+00 RT - 113+40 RT							0.20						
FFF	501+80 RT - 502+40 RT							0.60						
GGG	750+10.8 RT - 751+22.6 RT		0.18	0.0260	0.0324		3.60						0.0400	36.0
HHH	750+10.8 LT - 751+22.6 LT		0.18	0.0260	0.0324		3.60						0.0400	36.0
W-1	PARKING LOT										210.00	2.00		
	PAVEMENT REMOVAL AREAS		1.20	0.1730	0.2160		24.00						0.2661	240.0
	SUBTOTAL	259.3	36.58	5.2810	6.5814	35.1	564.20	5.00	15.00	72.10	210.00	2.00	8.12457	6284.3
	ROUNDING	10.7	0.42	0.7190	0.4186	2.9	10.80	1.00	0.00	2.90	0.00	0.00	0.17543	55.7
	TOTAL	270	37	6	7	38	575	6	15	75	210	2	8.3	6340

INCIDENTAL ITEMS

ITEM NO.	ITEM	UNIT	TOTAL
651.34041	WHITE SPRUCE 1.3m B&B	EA	25.
651.61081	RED PINE 2.5m B&B	EA	27.
652.06030	RED MAPLE 1.0m CONT. GROWN	EA	50.
652.68701	PIN OAK 75mm CAL. B&B	EA	3.
653.02046	AMUR MAPLE 1.3m CLUMP B&B	EA	7.
653.23701	CRIMSON CLOUD HAWTHORN 75mm CAL. B&B	EA	5.
653.29701	WINTER KING HAWTHORN	EA	3.
654.31400	HETZ JUNIPER 0.6m SPREAD CONT. GROWN	EA	33.
655.01040	SPECKLED ALDER 0.8m CONT. GROWN	EA	100.
655.27020	SUMMERSWEET 0.5m CONT. GROWN	EA	16.
655.33040	SILKY DOGWOOD 0.8m CONT. GROWN	EA	71.
655.37020	GRAY DOGWOOD 0.5m CONT. GROWN	EA	16.
655.72040	COMMON WITCH-HAZEL 0.8m CONT. GROWN	EA	50.
655.80040	COMMON WINTERBERRY HOLLY 0.8m CONT. GROWN	EA	75.
655.82050	DOUBLE JAPANESE KERRIA 0.9m CONT. GROWN	EA	34.
656.43040	PINK RUGOSA ROSE 0.8m CONT. GROWN	EA	30.
656.48040	PUSSY WILLOW 0.8m CONT. GROWN	EA	75.
656.62061	PERSIAN LILAC 1.3m B&B	EA	15.
656.67061	COMMON LILAC 1.3m B&B	EA	10.
656.82040	ARROWWOOD 0.8m CONT. GROWN	EA	75.
656.85071	WAYFARRINGTREE VIBURNUM 1.5m B&B	EA	14.
656.86061	NANNYBERRY 1.3m B&B	EA	8.
658.2655	HAY SCENTED FERN 2 LITER CONTAINER GROWN	EA	51.

WATERLINE

PARTICIPATING

ITEM NO.	ITEM	UNIT	TOTAL	
202.43	REMOVAL OF EXISTING ASBESTOS CEMENT PIPE 0-600mm DIA	LM	~~145~~	120 m
403.99	TEMPORARY PAVEMENT	t	30.2	* 595.40
611.23006	600mm STEEL PIPE SLEEVE	LM	~~81~~	91.4
611.05220	200mm CEMENT LINED DUCTILE IRON WATER PIPE CL. 52	LM	~~112~~	115.5
611.05225	250mm CEMENT LINED DUCTILE IRON WATER PIPE CL. 52	LM	~~126~~	111.0
611.05230	300mm CEMENT LINED DUCTILE IRON WATER PIPE CL. 52	LM	639	717.90
611.6115	150mm PLASTIC PRESSURE WATER PIPE	LM	~~146~~	60.0
611.703	SERVICE CONNECTIONS	EA	1	
611.71030	300mm GATE VALVE	EA	3	
611.74003	POLYETHYLENE ENCASEMENT	LM	~~282~~	915.7
611.81	HYDRANTS	EA	2	
611.811	RELOCATING HYDRANTS	EA	1	

NON- PARTICIPATING

ITEM NO.	ITEM	UNIT	TOTAL
611.23006	600mm STEEL PIPE SLEEVE	LM	54
611.05230	300mm CEMENT LINED DUCTILE IRON WATER PIPE CL. 52	LM	120
611.703	SERVICE CONNECTIONS	EA	1
611.71030	300mm GATE VALVE	EA	2
611.74003	POLYETHYLENE ENCASEMENT	LM	22
611.811	RELOCATING HYDRANTS	EA	1

* TO SURFACING MATERIALS SUMMARY

INCIDENTAL ITEMS

ITEM NO.	ITEM	UNIT	TOTAL
201.711	SELECTIVE CLEARING	m2	75.
202.201	DEMOLISHING BUILDINGS	U	1.
202.202	DEMOLISHING BUILDINGS	U	1.
202.203	DEMOLISHING BUILDINGS	U	1.
206.19	COMMON STRUCTURE EXCAVATION EXPLORATORY	m3	20.
209.4	GRANULAR BACKFILL (GRAVEL)	m3	2350.
214	FINE GRADING	U	1.
304.35	CRUSHED GRAVEL FOR DRIVES	m3	500.
503.201	COFFERDAMS	U	1.
503.202	COFFERDAMS	U	1.
503.203	COFFERDAMS	U	1.
510.1	PILE DRIVING EQUIPMENT	U	1.
510.61	FURNISHING AND DRIVING STEEL BEARING PILES	kg	5900.
510.65	DRIVING POINTS FOR STEEL BEARING PILES	EA	12.
582.9	RESET SLOPE PAVING	m2	310.
604.85	WATER REPELLANT FOR EXISTING CB'S AND DI'S	EA	12.
606.417	PORTABLE CONCRETE BARRIER FOR TRAFFIC CONTROL	LM	1000.
616.101	TRAFFIC SIGNALS	U	1.
616.102	TRAFFIC SIGNALS	U	1.
616.103	TRAFFIC SIGNALS	U	1.
616.161	TRAFFIC SIGNALS (TEMP.)	U	1.
616.191	ALTERATIONS TO TRAFFIC SIGNALS	U	1.
618.61	UNIFORMED OFFICERS WITH VEHICLE	$	1.
618.7	FLAGGERS	HR	4500.
619.1	MAINTENANCE OF TRAFFIC	U	1.
619.25	PORTABLE CHANGEABLE MESSAGE SIGN	U	4.
621.3	SINGLE DELINEATOR WITH POST	EA	360.
622.1	STEEL WITNESS MARKERS	EA	50.
660.75	BUILDING	U	1.
670.045	CONSTRUCT AND REMOVE DETOURS	U	1.
670.066	MAILBOX POST ASSEMBLIES	EA	1.
692	MOBILIZATION	U	1.
693	ON-THE-JOB TRAINING OF UNSKILLED WORKERS	$	1.
698.11	FIELD OFFICE TYPE A	U	1.
698.2	PHYSICAL TESTING LABORATORY	U	1.
699	TEMPORARY PROJECT WATER POLLUTION CONTROL	$	1.
1008.1	ALTERATIONS AND ADDITIONS AS NEEDED, TEMPORARY LIGHTING	$	1.
1009	MISCELLANEOUS LANDSCAPE TREATMENT	$	1.

SEWER

ITEM NO.	206.1	403.11	612.31	612.73520
ITEM	COMMON STRUCTURE EXCAVATION	HOT BITUMINOUS PAVEMENT, MACHINE METHOD	PRECAST CONCRETE MANHOLE	200mm PVC SEWER PIPE SDR 35
UNIT	m3	t	EACH	m
SEWER LINE	880.0		5.0	283.0
TRENCH PATCH ON COUNTRY CLUB LANE		54.8		
COUNTRY CLUB LANE/ SHERBOURNE ROAD OVERLAY		43.2		
SUBTOTAL	880.0	98.0	5.0	283.0
ROUNDING			0.0	0.0
TOTAL	880*	98.0**	5.0	283.0

* TO DRAINAGE SUMMARY
** TO SURFACING MATERIALS SUMMARY

SALVAGED MATERIALS

DESCRIPTION	
DRAINAGE STRUCTURE GRATES AND FRAMES (NH RTE 33)	DISTRICT 6
DRAINAGE STRUCTURE GRATES AND FRAMES (I-95 AND RAMPS)	BUREAU OF TURNPIKES
BEAM GUARD RAIL	DISTRICT 6
EXISTING SIGNS , POSTS, AND HARDWARE	BUREAU OF TRAFFIC

SUBSIDIARY ITEMS

DESCRIPTION
SAWCUT (LONGITUDINAL) - SUBSIDIARY TO ITEM 203.1 (COMMON EXCAVATION)
SALVAGE OF MATERIALS - SEE SALVAGE OF MATERIALS SUMMARY
FOR SUBSIDIARY DRAINAGE WORK SEE DRAINAGE SUMMARY COMMENTS
NOTE: THIS LIST SHOULD NOT BE CONSIDERED A COMPLETE LIST OF SUBSIDIARY WORK PRESENT IN THE PROJECT. REFER ALSO TO THE PLANS, PROPOSAL, SPECIAL PROVISIONS, AND TO THE STANDARD SPECIFICATIONS.

SUPERSEDED
DATE 9-30-98

AS-BUILT TOTALS

STATE OF NEW HAMPSHIRE
DEPT. OF TRANS. BUREAU HIGHWAY DESIGN

CM-5379(017)	12250	21	282

SUMMARY OF QUANTITIES (ESTIMATE)

THIS INFORMATION IS FOR BIDDING PURPOSES ONLY

DRAINAGE SUMMARY

Item	202.41 Removal of Existing Pipe 0 to 600mm Diameter	202.5 Removal of Catch Basins, Drop Inlets, and Manholes	206.1 Common Structure Excavation	570.4 Mortar Rubble Masonry	585.2 STONE FILL, CLASS B	585.3 STONE FILL, CLASS C	603.00203 300 mm R.C. Pipe, Class III	603.00204 375 mm R.C. Pipe, Class III	603.00205 450 mm R.C. Pipe, Class III	603.00206 600 mm R.C. Pipe, Class III	603.00208 750 mm R.C. Pipe, Class III	603.34105 Steel End Section for 450 mm Pipe	603.34106 Steel End Section for 600 mm Pipe	603.34108 Steel End Section for 750 mm Pipe	604.0007 Polyethelene Liner	604.12 Catch Basins, Type B	604.1215 Catch Basins Type B, 1.5m Dia	604.1218 Catch Basins Type B, 1.8m Dia	604.15 Catch Basins, Type E	604.1515 Catch Basins Type E, 1.5m Dia	604.1518 Catch Basins Type E, 1.8m Dia	604.4 Reconstructing Catch Basins and Drop Inlets	604.45 Adjusting Catch Basin & Drop Inlet Grates and Frames	605.79 Underdrain flushing basins	605.915 150 mm Pipe Und. (Contractors Option)	Notes
Standard No.																										
Unit	LM	EA	M3	M3	M3	M3	LM	LM	LM	LM	LM	EA	EA	EA	EA	U	U	U	U	U	U	LM	EA	EA	LM	
DN - 1 STA 103+37.0 LT 20.69m to STA 103+37.0 LT 10.08m			1.2			1.2		~~6.4~~ 5.9				1.0			1.0	1.0										
DN - 2 STA 103+37.0 RT 19.49m to STA 103+37.0 RT 9.90m			0.9			0.8		~~6.4~~ 5.9				1.0			1.0	1.0										
DN - 3 STA 105+14.7 RT 20.06m to STA 105+53.2 RT 14.60m			5.3			5.3		~~21.0~~ 22.4				1.0				1.1										REMOVE EX. CB +53 RT 14.60m (SUBSID. TO ITEM 203.1) REMOVE EX. 375mm RCP +45 TO +53 (SUBSID. TO ITEM 203.1) PLUG AND ABANDON EX. 375mm +28 TO +45
DN - 4 STA 105+53.2 RT 14.60m to STA 105+94.0 LT 0.30m								~~43.3~~ 41.3							1.0	1.1										
DN - 5 STA 105+94.0 LT 0.30m to STA 105+93.8 LT 2.00m								~~1.0~~ 2.3							1.0	1.0										
DN - 6 STA 105+93.8 LT 2.00m to STA 106+54.6 LT 2.79m								~~60.8~~ 60.0							1.0	1.0										
DN - 7 STA 107+82.8 RT 40.79m to STA 107+97.8 LT 3.08m			1.2			1.2		~~40.0~~ 46.1				1.0			1.0	1.2										
DN - 8 STA 107+97.8 LT 3.08m to STA 107+80.5 LT 8.46m								~~18.0~~ 16.8							1.0	1.0										
DN - 9 STA 107+97.8 LT 3.08 to STA 108+08.6 LT 2.80m								~~10.5~~ 9.7							1.0	1.0										
DN - 10 STA 109+38.2 RT 21.36m to STA 109+43.5 RT 13.42m			3.0		2.7					~~5.0~~ 4.2				1.0	1.0	1.4										
DN - 11 STA 109+43.5 RT 13.42m to STA 109+43.8 LT 2.70m			2.4							~~16.1~~ 14.4					1.0		1.5									
DN - 11A STA 109+43.8 LT 2.70m to STA 109+40.0 LT 1.50m								~~2.8~~ 3.3							1.0	1.2										
DN - 12 STA 109+40.0 LT 1.50m to STA 109+18.0 LT 2.70m								22.1 21.5							1.0	1.1										
DN - 13 STA 109+43.8 LT 2.70m to STA 109+89.6 LT 1.12m			0.9						~~46.3~~ 45.3						1.0	1.4										
DN - 14 STA 109+89.6 LT 1.12m to STA 109+93.7 LT 2.70m			1.0					~~4.5~~ 3.2							1.0	1.3										
DN - 15 STA 109+93.7 LT 2.70m to STA 110+69.6 LT 1.00m			0.3					~~76.0~~ 76.3							1.0	1.2										
DN - 16 STA 110+69.6 LT 1.00m to STA 111+0.50 RT 0.70m								~~35.5~~ 34.6							1.0	1.1										
DN - 17 STA 111+05.0 RT 0.70m to STA 111+60.5 LT 3.45m								~~55.8~~ 55.5							1.0	1.1										
DN - 18 STA 111+60.5 LT 3.45m to STA 111+60.8 LT 5.90m								~~2.7~~ 2.0							1.0	1.0										
DN - 19 STA 109+43.8 LT 26.55m to STA 109+43.8 LT 20.10m						0.6	~~3.1~~ 2.8					1.0			1.0	1.0										
DN - 20 STA 112+52.1 RT 46.94m to STA 112+48.0 RT 28.47m			35.6	3.1						~~8.0~~ 7.7																
DN - 21 STA 113+95.2 RT 9.90m															1.0								1.0			
DN - 22 STA 113+95.1 LT 22.67m to STA 113+95.8 LT 13.30m			0.9			0.9	~~7.8~~ 7.3					1.0			1.0	1.0										
DN - 23 STA 400+45.5 RT 29.00m to STA 400+24.4 RT 4.60m			0.8			0.8	~~27.4~~ 30.9					1.0			1.0	1.0										REMOVE 43.7m 375mm RCP 107+89.3 RT 38.5m TO 108+14.3 RT 3.5m (SUBSID. TO ITEM 203.1) REMOVE CBs +08.0 RT 22.5m AND +14.6 RT 3.5m (SUBSID. TO ITEM 203.1)
DN - 24 STA 401+09.4 RT 15.10m to STA 401+09.4 LT 0.30m			1.8			1.8	~~10.3~~ 9.0					1.0			1.0	1.0										
DN - 25 STA 400+18.0 RT 14.65m to STA 400+18.0 LT 0.30m			0.8			0.8	~~10.0~~ 9.4					1.0			1.0	1.0										
DN - 26 STA 402+02.9 RT 12.41m to STA 402+02.9 LT 0.30m			0.8			0.8	~~10.5~~ 10.1					1.0			1.0	1.1										
DN - 27 STA 304+01.6 RT 19.13m to STA 304+03.0 RT 4.00m			0.9			0.9	10.2 9.5					1.0			1.0	1.0										
DN - 28 STA 303+07.3 RT 16.05m to STA 303+07.3 RT 3.90m			3.4					7.1				1.0			1.0	1.0										
DN - 29 STA 302+02.6 LT 16.85m to STA 19+25.0 LT 25.43m			684.0																							
DN - 30 STA 302+02.8 LT 15.36m to STA 302+08.6 LT 16.85m									~~6.0~~ 4.0				1.0								1.0					CB-E SLAB TOP, NO SUMP
DN - 31 STA 302+02.8 LT 15.36m to STA 302+12.0 RT 3.90m										~~21.1~~ 19.5					1.0			1.0								
DN - 32 STA 302+12.0 RT 3.90m to STA 302+12.2 RT 17.59m			5.7	3.1						~~13.7~~ 12.9																
DN - 33 STA 302+12.0 RT 3.90m to STA 301+98.0 RT 3.90m								~~13.8~~ 13.3							1.0	1.0										
DN - 34 STA 301+00.0 RT 12.60m to STA 301+00.0 LT 0.30m			3.9			1.7	~~5.9~~ 6.3					1.0			1.0	1.0										
DN - 35 STA 300+03.6 RT 12.10m to STA 300+01.3 RT 0.90m			3.4			0.8	~~8.0~~ 12.0					1.0			1.0	1.0										
DN - 36 STA 22+55.1 LT 17.95m to STA 22+55.1 LT 22.70m		1.0						4.8							1.0	1.2										CONNECT TO EXISTING RCP +55.1 LT 17.95m
DN - 37 STA 23+31.7 LT 18.50m															1.0							1.0				
DN - 38 STA 500+11.6 RT 2.66m to STA 500+99.0 RT 3.45m			1.7				~~86.6~~ 86.0												1.4							CONNECT TO EXISTING CB, +11.6, RT 2.66m REMOVE 86.6m 300mm RCP (SUBSID. TO ITEM 203.10) REMOVE CB +99 RT 2.70m (SUBSID. TO ITEM 203.1)
DN - 39 STA 500+99.0 RT 3.45m to STA 500+99.3 LT 0.30m			1.2				~~3.6~~ 2.5								1.0	1.4										REMOVE 9.7m 150mm CMP (SUBSID. TO ITEM 203.1) REMOVE 2.9m 300mm RCP (SUBSID. TO ITEM 203.1) REMOVE CB +99.2 LT 0.60m (SUBSID. TO ITEM 203.1)
DN - 40 STA 502+83.3 LT 17.47m to STA 502+78.2 LT 0.30m			1.9		23.0				~~16.9~~ 16.8				1.0		1.0	1.1										
DN - 41 STA 502+78.2 LT 0.30m to STA 502+99.8 RT 8.91m			9.1	3.1					~~23.1~~ 22.2																	
DN - 42 STA 700+28.4 LT 18.00m to STA 700+25.8 LT 8.30m									~~11.0~~ 9.5						1.0	1.1										
DN - 43 STA 700+25.8 LT 8.30m to STA 700+25.8 RT 2.10m									~~10.0~~ 9.3						1.0	1.1										
DN - 44 STA 700+31.0 LT 19.50m to STA 700+40.0 RT 17.75m			40.5	8.1	40.5				~~38.3~~ 38.4																	
DN - 45 STA 700+25.8 RT 2.10m to STA 112+88.0 LT 17.40m								~~18.0~~ 18.4							1.0	1.1										
DN - 46 STA 700+25.8 LT 17.40m to STA 700+34.2 RT 9.10m								~~10.5~~ 8.0							1.0	1.1										
DN - 47 STA 702+07.0 RT 23.22m to STA 702+15.3 LT 10.50m			51.7		9.2					~~27.1~~ 26.6				1.0						1.2						
DN - 48 STA 702+15.3 LT 10.50m to STA 702+90.0 LT 10.50m			120.7							~~75.0~~ 77.6									1.2							
DN - 49 STA 702+90.0 LT 10.50m to STA 703+40.0 LT 10.50m			57.4						~~50.0~~ 48.5												1.2					
DN - 50 STA 703+40.0 LT 10.50m to STA 703+62.0 LT 12.60m			18.3					~~22.0~~ 19.4											1.1							
DN - 51 STA 703+62.0 LT 12.60m to STA 704+62.0 LT 6.90m			29.8				~~100.0~~ 101.3												1.0							
DN - 52 STA 703+40.0 LT 10.50m to STA 61+21.0 RT 14.26m			9.7				~~27.0~~ 25.8												1.0							
DN - 53 STA 703+62.0 LT 12.60m to STA 61+21.0 LT 6.90m							~~17.0~~ 14.9												1.0							
DN - 54 STA 62+04.0 RT 14.43m to STA 62+04.0 LT 7.10m			16.5		2.7			~~15.7~~ 29.9					1.0						1.1							
DN - 55 STA 62+04.0 LT 7.10m to STA 703+54.0 RT 10.50m			1.5					46.5 47.5											1.1							
DN - 56 STA 703+54.0 RT 10.50m to STA 704+54.0 RT 6.90m			30.1				100.0 96.5												1.0							
DN - 57 STA 8+67.6 LT 62.81m to STA 8+10.0 LT 31.50m			176.8	4.0	170.4						~~13.7~~ 13.3						1.2									MH COVER AND FRAME
DN - 58 STA 8+10.0 LT 31.50m to STA 80+14.4 LT 14.44m											~~15.6~~ 14.1				1.0			1.3								
DN - 59 STA 80+14.4 LT 14.44m to STA 8+19.2 LT 17.86m								~~4.5~~ 3.3							1.0	1.0										
DN - 60 STA 80+14.4 LT 14.44m to STA 80+24.4 RT 2.32m											~~19.5~~ 17.5				1.0		1.3									
DN - 61 STA 80+24.4 RT 2.32m to STA 80+46.0 RT 23.45m										~~30.0~~ 29.0					1.0	1.3										
DN - 62 STA 80+46.0 RT 23.45m to STA 80+88.1 RT 33.55m										~~44.0~~ 42.6					1.0	1.3										
DN - 63 STA 80+88.1 RT 33.55m to STA 81+37.1 RT 33.55m										~~49.1~~ 48.0					1.0	1.5										
DN - 64 STA 81+37.1 RT 33.55m to STA 81+57.1 RT 36.50m										~~20.3~~ 17.3					1.0	1.3										16.4m X RCP AND CB-B SUBSID. TO ITEM 660.75
DN - 65 STA 81+57.1 RT 36.50m to STA 82+35.1 RT 37.08m										~~78.0~~ 77.0					1.0	1.1										68.0m X RCP SUBSID. TO ITEM 660.75
DN - 66 STA 82+35.1 RT 37.08m to STA 82+42.9 RT 31.47m									~~9.5~~ 11.8						1.0	1.0										
DN - 67 STA 82+42.9 RT 31.47m to STA 82+48.9 RT 21.00m								~~12.0~~ 8.8							1.0	1.0										
DN - 68 STA 82+48.9 RT 21.00m to STA 82+42.7 LT 33.20m							~~54.0~~ 53.5								1.0	1.0										
DN - 69 STA 9+17.9 LT 55.00m to STA 8+60.0 LT 37.15m			142.2	4.0	135.8						~~10.3~~ 9.2						1.0									MH COVER AND FRAME
DN - 70 STA 8+60.0 LT 37.15m to STA 8+60.0 LT 20.00m											~~17.2~~ 15.5				1.0	1.3										
DN - 71 STA 8+60.0 LT 20.00m to STA 8+69.6 RT 0.75m											~~22.8~~ 21.8				1.0			1.2								
DN - 72 STA 8+69.6 RT 0.75m to STA 8+67.2 RT 2.64m											2.0				1.0		1.2									
DN - 73 STA 8+67.2 RT 2.64m to STA 8+51.4 RT 14.69m										20.0 16.1					1.0	1.2										
DN - 74 STA 8+51.4 RT 14.69m to STA 8+34.3 RT 31.71m										24.0 24.3					1.0	1.2										
DN - 75 STA 8+34.3 RT 31.71m to STA 80+81.3 LT 20.83m										~~22.0~~ 21.7					1.0	1.1										
DN - 76 STA 80+81.3 LT 20.83m to STA 81+03.1 LT 8.23m									~~25.0~~ 24.6						1.0	1.1										
DN - 77 STA 81+03.1 LT 8.23m to STA 81+44.2 LT 5.45m								40.9 40.2							1.0	1.0										
DN - 78 STA 81+44.2 LT 5.45m to STA 81+45.0 LT 7.54m								~~2.3~~ 1.5							1.0	1.0										
DN - 79 STA 81+45.0 LT 7.54m to STA 81+72.5 LT 7.54m								~~27.5~~ 28.1							1.0	1.1										
DN - 80 STA 81+72.5 LT 7.54m to STA 81+72.5 LT 5.10m								~~2.2~~ 1.6							1.0	1.0										
DN - 81 STA 81+72.5 LT 5.10m to STA 81+87.2 RT 8.50m								19.2 11.1								1.0										8.2m X RCP AND CB-B SUBSID. TO ITEM 660.75
DN - 82 STA 81+72.5 LT 5.10m to STA 81+55.6 LT 10.50m								~~23.0~~ 7.3								1.0										11.5m X RCP AND CB-B SUBSID. TO ITEM 660.75
DN - 83 STA 8+69.6 RT 0.75m to STA 63+98.0 LT 4.50m									49.3 48.3						1.0	1.3										
SUBTOTAL	0.0	1.0	1467.3	25.4	384.3	17.6	~~481.4~~	~~676.8~~	~~285.4~~	~~453.4~~	~~101.1~~	14.0	3.0	2.0	62.0	63.1	6.2	3.5	9.8	1.2	2.2	1.0	1.0	0.0	0.0	AS-BUILT TOTALS
							475.5	648.1	[illegible]	426.[illegible]	92.8															

STATE OF NEW HAMPSHIRE

DESIGN

CM-5379(017) 12250 22 282

SUMMARY OF QUANTITIES (ESTIMATE)

THIS INFORMATION IS FOR BIDDING PURPOSES ONLY

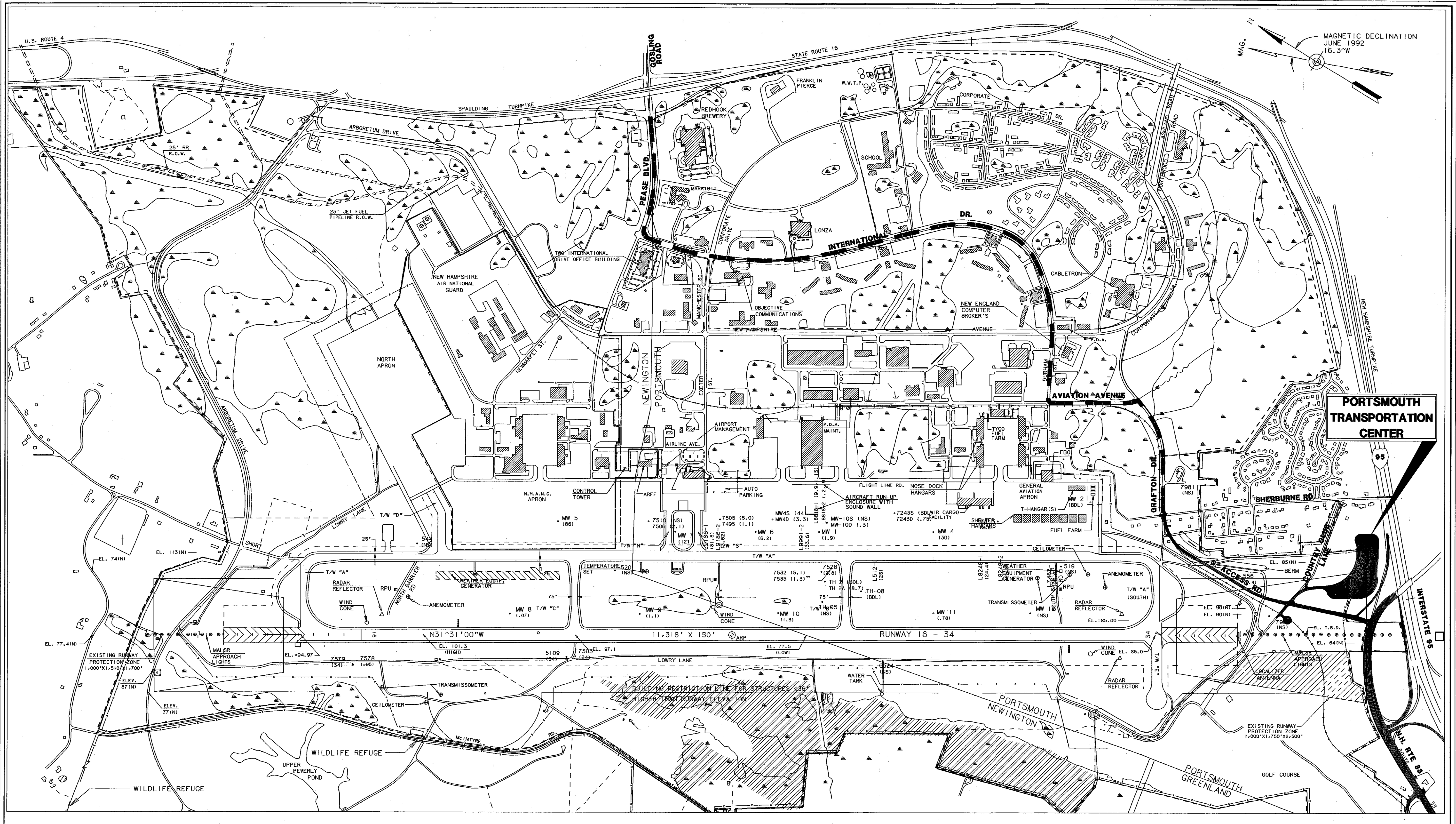
DRAINAGE SUMMARY

Item	202.41 Removal of Existing Pipe 0 to 600mm Diameter	202.5 Removal of Catch Basins, Drop Inlets, and Manholes	206.1 Common Structure Excavation	570.4 Mortar Rubble Masonry	585.2 STONE FILL, CLASS B	585.3 STONE FILL, CLASS C	603.00203 300 mm R.C. Pipe, Class III	603.00204 375 mm R.C. Pipe, Class III	603.00205 450 mm R.C. Pipe, Class III	603.00206 600 mm R.C. Pipe, Class III	603.00208 750 mm R.C. Pipe, Class III	603.34105 Steel End Section for 450 mm Pipe	603.34106 Steel End Section for 600 mm Pipe	603.34108 Steel End Section for 750 mm Pipe	604.0007 Polyethelene Liner	604.12 Catch Basins, Type B	604.1215 Catch Basins Type B, 1.5m Dia	604.1218 Catch Basins Type B, 1.8m Dia	604.15 Catch Basins, Type E	604.1515 Catch Basins Type E, 1.5m Dia	604.1518 Catch Basins Type E, 1.8m Dia	604.4 Reconstructing Catch Basins and Drop Inlets	604.45 Adjusting Catch Basin & Drop Inlet Grates and Frames	605.79 Underdrain flushing basins	605.915 150 mm Pipe Und. (Contractors Option)	Notes
Standard No.																										
Unit	LM	EA	M3	M3	M3	M3	LM	LM	LM	LM	LM	EA	EA	EA	EA	U	U	U	U	U	U	LM	EA	EA	LM	
DN - 84 STA 63+98.0 LT 4.50m to STA 63+98.0 LT 7.50m							~~2.4~~ 2.0									1.0										
DN - 85																										
DN - 86 STA 81+45.0 LT 7.54m to STA 81+46.5 LT 30.63m								~~23.1~~ 23.1							1.0	1.0										
DN - 87 STA 63+98.0 LT 4.50m to STA 64+42.4 LT 4.50m								~~42.9~~ 41.5							1.0	1.0										
DN - 88																										
DN - 89 STA 8+69.6 RT 0.75m to STA 8+84.6 LT 8.12m								~~17.5~~ 15.4							1.0	1.1										
DN - 90 STA 8+84.6 LT 8.12m to STA 9+07.4 LT 20.00m								~~25.5~~ 24.2							1.0	1.0										
DN - 91 STA 61+21.0 RT 14.26m to STA 60+92.0 RT 14.26m							~~28.0~~ 27.8					1.0														
DN - 92 STA 450+31.6 LT 28.30m to STA 450+33.0 RT 0.30m			2.0			1.2		~~27.1~~ 30.0				1.0			1.0	1.2										REMOVE EX. 375mm RCP LT 28.0m TO LT 19.5m (SUBSID. TO ITEM 603.00204) PLUG AND ABANDON EX. 375mm RCP LT 19.5m TO LT 3.7m WRECK AND FILL EX. CB STA 450+28.2 LT 3.6m (SUBSID. TO ITEM 203.1)
DN - 93 STA 450+33.0 RT 7.60m to STA 450+33.0 RT 0.30m			1.4					~~6.4~~ 5.3											1.2							
DN - 94 STA 450+24.0 RT 17.40m to SAT 450+33.0 RT 7.60m			0.3				~~13.8~~ 14.0												1.0							
DN - 95 STA 450+33.0 RT 7.60m to STA 450+47.0 RT 7.60m			1.4				~~14.4~~ 14.0												1.1							
DN - 96 STA 708+97.5 LT 10.74m to STA 709+22.1 LT 10.94m									~~24.0~~ 21.3				2.0													
DN - 97 STA 709+93.0 LT 7.30m to STA 709+95.5 RT 7.10m			1.0						~~13.6~~ [illegible]										1.0							
DN - 98 STA 709+95.5 RT 7.10m to STA 710+77.0 RT 13.60m			8.7		7.2				~~75.7~~ 42.0				1.0						1.0							
DN - 99 STA 106+66.9 LT 14.30m to STA 450+24.0 RT 17.40m																									110.4	
DN - 100 STA 400+27.0 RT 4.40m to STA 401+07.8 RT 11.20m				0.2																					88.0	
DN - 101 STA 304+00.0 RT 7.00m to STA 302+02.8 LT 15.36m																								1.0	200.1	2 X 45 DEG. BENDS SUBSID.
DN - 102 STA 300+04.6 RT 4.10m to STA 302+02.8 LT 15.36m																								1.0	207.4	2 X 45 DEG. BENDS SUBSID.
DN - 103 STA 22+53.0 LT 21.40m to STA 300+01.3 RT 0.90m																									53.7	
DN - 104 STA 23+29.5 LT 17.10m to STA 22+55.1 LT 22.00m																									73.8	
DN - 105 STA 500+19.0 LT 0.40m to STA 502+00.0 RT 2.60m																								1.0	181.0	2 X 45 DEG. BENDS SUBSID. CONNECT TO EXISTING CB +19.0 LT 0.40m
DN - 106 STA 109+43.5 RT 13.40m to STA 110+20.0 RT 12.40m																									75.4	
DN - 107 STA 110+20.3 RT 17.80m to STA 112+00.0 RT 12.00m				0.2																					180.0	1 X 45 DEG. BEND SUBSID.
DN - 108 STA 450+28.2 LT 3.50m to STA 450+49.5 RT 3.70m	22.3																									
DN - 109 STA 105+40.0 LT 28.10m to STA 106+67.1 LT 10.50m																										ABANDON UNDERDRAIN
DN - 110 STA 400+54.0 LT 2.00m to STA 400+65.0 RT 11.60m																										REMOVE 17.5m 375mm RCP (SUBSID. TO ITEM 203.1) REMOVE DI =54.0 LT 2.0m (SUBSID. TO ITEM 203.1) REMOVE CB +62.0 RT 3.2m (SUBSID. TO ITEM 203.1)
DN - 111 STA 303+71.3 RT 23.00m to STA 303+83.0 RT 12.60m																										REMOVE 14.2m 375mm RCP (SUBSID. TO ITEM 203.1) REMOVE DI +78.0 RT 17.4m (SUBSID. TO ITEM 203.1)
DN - 112 STA 303+20.8 LT 3.70m to STA 303+23.3 LT 10.70m																										REMOVE 3.9m 450mm RCP (SUBSID. TO ITEM 203.4) PLUG AND ABANDON 5.1m 450mm RCP WRECK AND FILL CB +23.3 LT 10.7m
DN - 113 STA 303+17.3 LT 12.80m to STA 303+23.3 LT 10.70m																										PLUG AND ABANDON 6.9m 300mm RCP WRECK AND FILL DI +17.3 LT 12.8m
DN - 114 STA 400+91.0 LT to STA 401+15.0 LT																										REMOVE 11.8m 375mm RCP RT 3.8m TO LT 8.0m (SUBSID. TO ITEM 203.1) REMOVE CB +07 LT 4.0m (SUBSID. TO ITEM 203.1) PLUG AND ABANDON 33.5m 375mm RCP PLUG AND ABANDON24.0m 450mm RCP WRECK AND FILL CB 400+91 LT 17.5m WRECK AND FILL CB 401+07 LT 23.4m WRECK AND FILL CB 401+15 LT 5.2m
DN - 115 STA 112+95.8 LT 24.00m to STA 112+98.3 LT 11.60m	12.3	1.0																								
DN - 116 STA 107+27.0 LT 16.30m to STA 107+27.1 LT 20.00m								3.7																		CONNECT TO EXISTING 375mm RCP
DN - 117 STA 109+39.0 RT 4.00m to STA 109+39.0 RT 10.60m	12.8																									WRECK AND FILL DI +39 RT 4.0m
DN - 118 STA 107+56.0 RT 10.20m to STA 107+54.0 RT 16.00m																										REMOVE 4.0m 350mm RCP (SUBSID. TO ITEM 203.1) REMOVE DI +56 RT 10.2m (SUBSID. TO ITEM 203.1)
DN - 119 STA 401+94.0 LT 3.90m to STA 401+94.0 RT 8.60m	12.5																									REMOVE CB +94.0 LT 3.9m (SUBSID. TO ITEM 203.1)
DN - 120 STA 302+17.3 RT 11.70m to STA 302+22.5 RT 26.30m																										REMOVE 15.4m 600mm RCP (SUBSID. TO ITEM 203.1)
DN - 121 STA 501+51.6 RT 11.10m to STA 502+82.4 LT 22.80m																										REMOVE MH 502+82.4 LT 22.80m (SUBSID. TO ITEM 203.1) REMOVE 16.0m 300mm RCP +82.4 TO +68.6 (SUBSID. TO ITEM 203.1) PLUG AND ABANDON 119.4m 300mm RCP WRECK AND FILL CB 501+51.6 RT 11.10m WRECK AND FILL CB 502+13.0 RT 2.68m
DN - 122 STA 113+25.3 LT 31.70m to STA 113+45.4 LT 30.60m	22.3	2.0																								REMOVE 21.5m 375mm RCP (SUBSID. TO ITEM 203.1)
DN - 123 STA 302+58.0 LT 17.40m to STA 302+63.9 LT 46.87m	30.2	1.0																								
DN - 124 STA 113+95.3 LT 10.05m to STA 113+95.3 LT 22.67m	12.5																									WRECK AND FILL CB LT 10.05m
DN - 125 STA 24+15.0 LT 25.75m to STA 25+04.1 LT 12.44m																									94.5	CONNECT TO EXISTING CB +15.0 LT 25.75m 1 x 45 DEG. BEND SUBSID. REMOVE 95.5m 150mm CMP (SUBSID. TO ITEM 203.1)
DN - 126 STA 25+05.7 LT 18.36m to STA 25+76.4 LT 12.00m																										CONNECT TO EXISTING CB +05.7 LT 18.36m 1 x 45 DEG. BEND SUBSID. REMOVE 72.4m 150mm CMP (SUBSID. TO ITEM 203.1)
DN - 127 STA 25+78.8 LT 24.70m to STA 27+20.0 LT 15.56m																										CONNECT TO EXISTING CB +78.8 LT 24.70m REMOVE 142.0m 150mm CMP (SUBSID. TO ITEM 203.1)
DN - 128 STA 23+31.7 LT 18.40m to STA 24+20.0 LT 12.40m																										CONNECT TO EXISTING CB +31.7 LT 18.40m
DN - 129 STA 750+61.0 RT 6.00m to STA 750+62.0 RT 8.10m	2.3	1.0													1.0	1.0										
DN - 130 STA 751+05.0 RT 6.00m to STA 750+06.3 RT 8.10m	2.2	1.0													1.0	1.0										
Catch Basins in I-95 Overlay not covered by notes																							3.0			
FROM PREVIOUS SHEET	0.0	1.0	1467.3	25.4	384.3	17.6	~~481.4~~ 57.8	~~676.8~~ [illegible]	~~285.4~~ 279.3	~~453.4~~ 357.3	~~101.1~~ [illegible]	14.0	3.0	2.0	62.0	63.1	6.2	3.5	9.8	1.2	2.2	1.0	1.0	0.0	0.0	
FROM SIGNAL AND LIGHTING SUMMARY																										
FROM SEWER SUMMARY			880.0																							
FROM SIGNING SUMMARY			427.4																							
DN 131										97.6																
								143.2	83.5																	
SUBTOTAL	129.40	7.00	2,789.50	25.80	391.50	18.80	540.00	823.00	398.70	453.40	101.10	16.00	6.00	2.00	69.00	71.44	6.20	3.48	15.12	1.20	2.20	1.00	4.00	3.00	1,264.30	
ROUNDING	5.60	-	60.50	1.20	8.50	1.20	20.00	17.00	16.30	21.60	8.90	-	-	-	6	3.56	0.80	0.52	0.88	0.80	0.80	1.00	1.00	-	15.70	
TOTAL	**135.00**	**7.00**	**2,850.00**	**27.00**	**400.00**	**20.00**	~~**560.00**~~	~~**840.00**~~	**415.00**	**475.00**	~~**110.00**~~	**16.00**	**6.00**	**2.00**	**75.00**	**75.00**	**7.00**	**4.00**	**16.00**	**2.00**	**3.00**	**2.00**	**5.00**	**3.00**	**1,280.00**	
							533.3	790.20	364.6	385.5	76.8															

AS-BUILT TOTALS

STATE OF NEW HAMPSHIRE
DESIGN

CM-5379(017) 12250 23 282



LEGEND

CONSTRUCTION ACCESS ROUTE

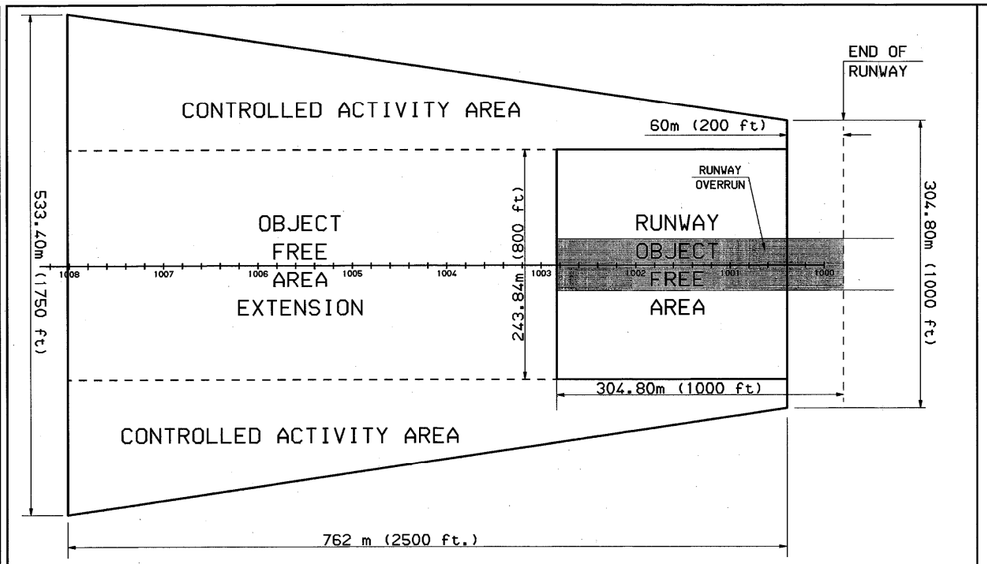
SCALE APPROXIMATE
1" = 6000'

STATE OF NEW HAMPSHIRE

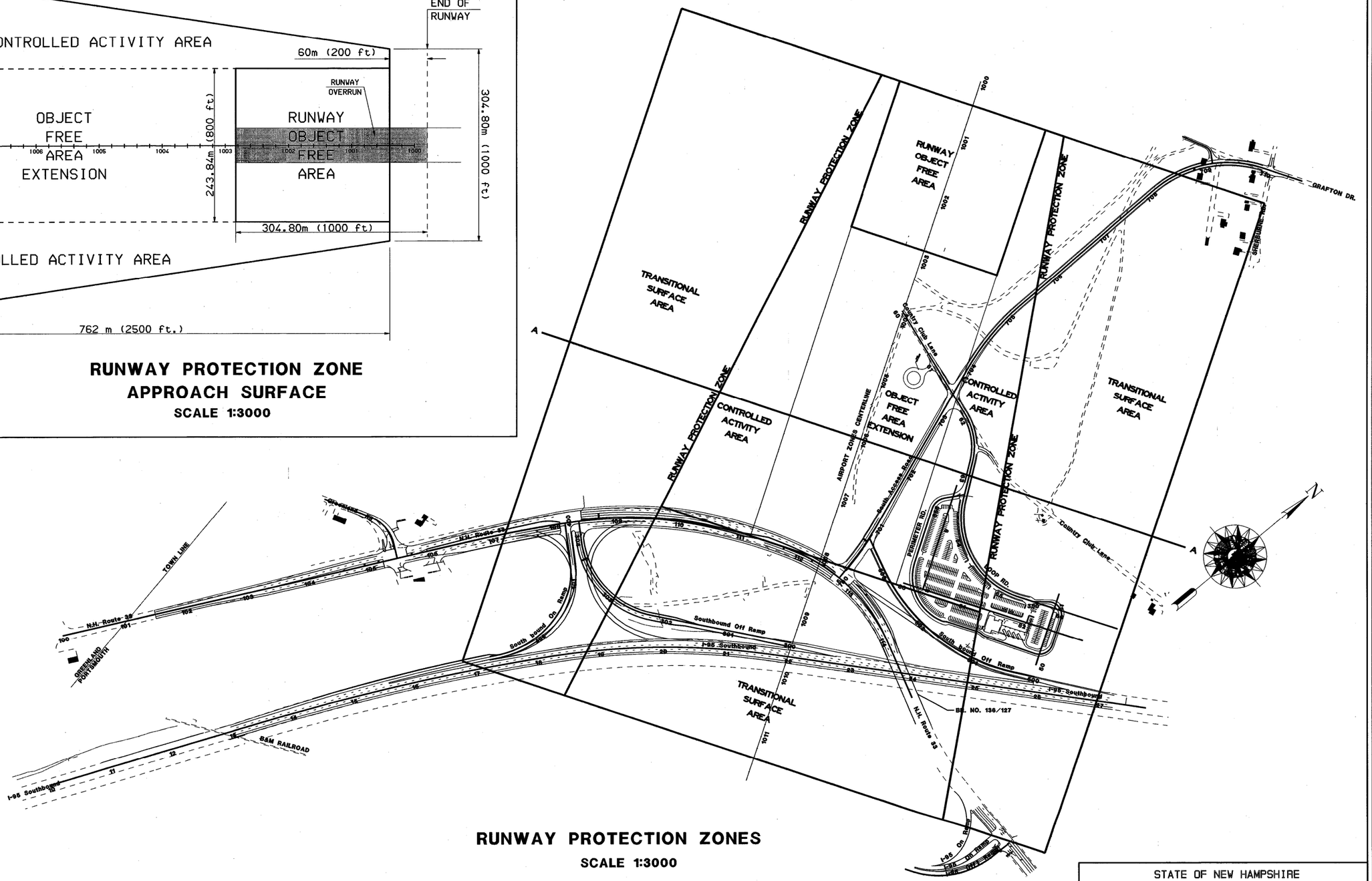
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

CONSTRUCTION ACCESS ROUTE
PEASE DEVELOPMENT AUTHORITY

MULTI-PLOT	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
PEASE.DAT	PEASE	TYPICALS	CM-5379(017)	12250	24	282



RUNWAY PROTECTION ZONE
APPROACH SURFACE
SCALE 1:3000



RUNWAY PROTECTION ZONES
SCALE 1:3000

METRIC

REVISIONS AFTER PROPOSAL

NUMBER	DESCRIPTION	STATION	STATION	DATE

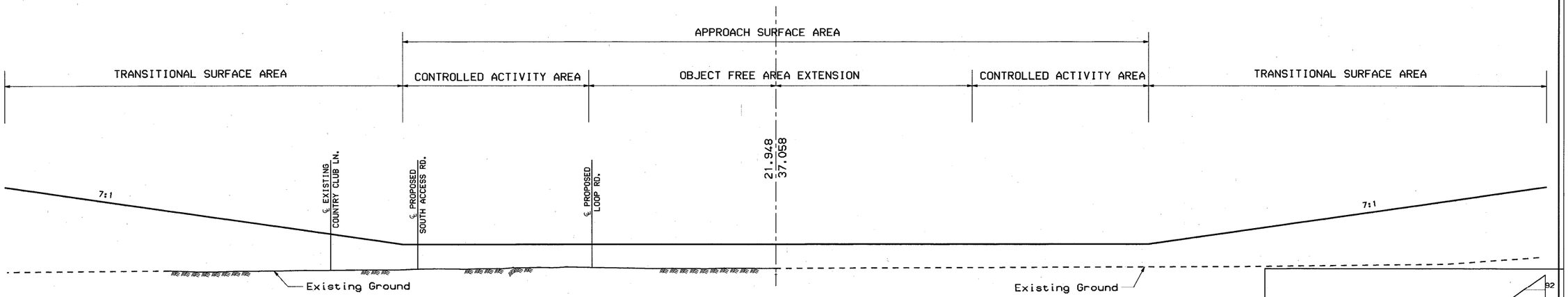
NOTEBOOKS		
BOOK		PAGE
BOOK		PAGE
BOOK		PAGE

EXISTING DETAIL	DATE	
PROPOSED DESIGN	DATE	
SHEET CHECKED J.KIROUAC	DATE	7/22/98
CADD PLOT: J. HEBERT	DATE	7/22/98
AS BUILT DETAILS	DATE	

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

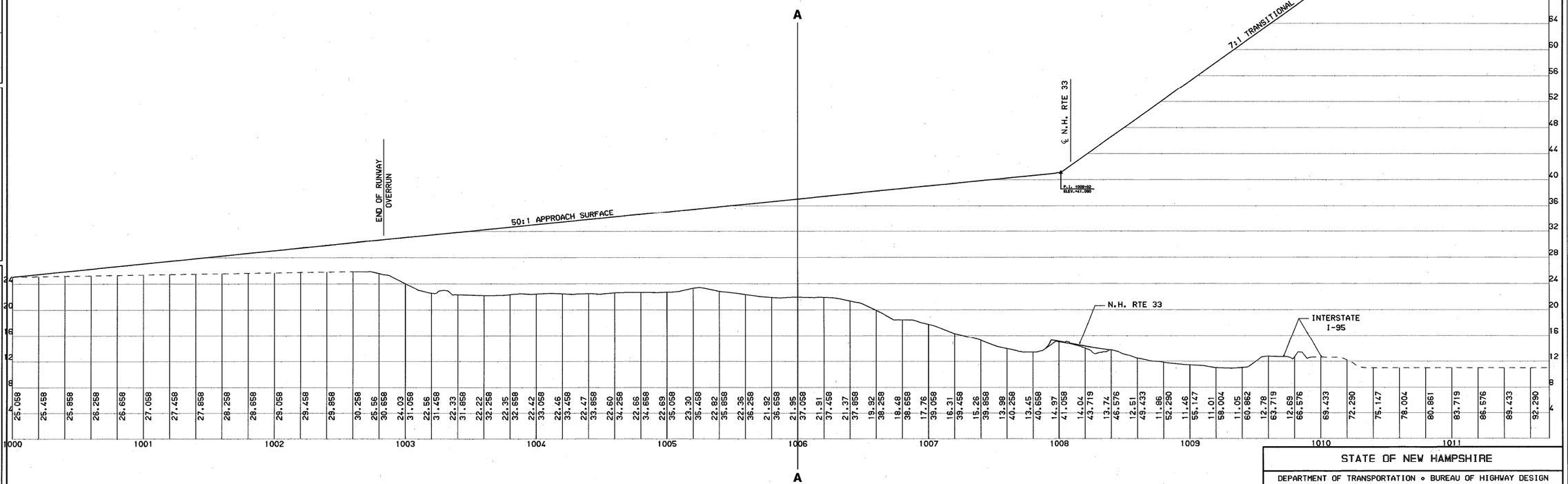
RUNWAY PROTECTION ZONE

MULTI-PLOT	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
AIRPORT_SHEET	A/FS/DET	FRONT_SHEET	CM-5379(017)	12250	25	282



SECTION A-A STA. 1006+00

SCALE 1:1000



PROFILE VIEW OF RUNWAY APPROACH ZONES

HORIZ. SCALE 1:1500
VERT. SCALE 1:300

METRIC

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	DESCRIPTION

NOTEBOOKS

BOOK	PAGE	
BOOK	PAGE	
BOOK	PAGE	

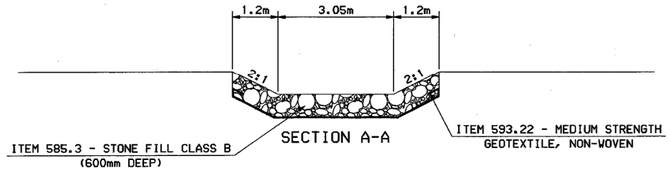
EXISTING DETAIL	DATE	
PROPOSED DESIGN	DATE	
SHEET CHECKED	J. KIROUAC	DATE 8/98
CADD PLOT	J. HEBERT	DATE 8/98
AS BUILT DETAILS		DATE

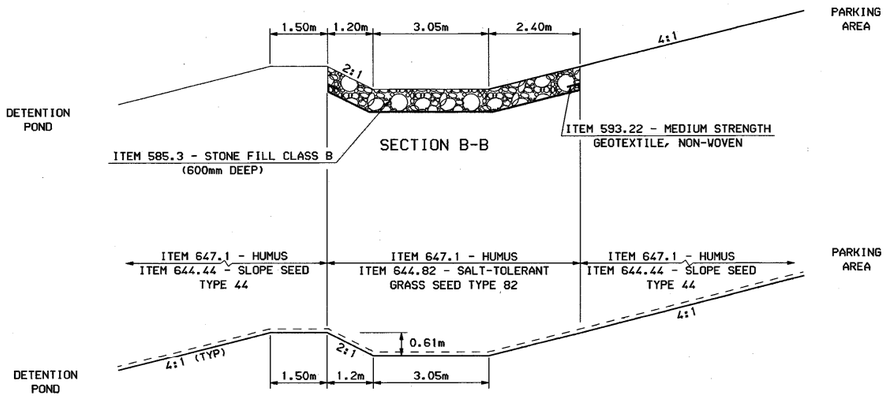
STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

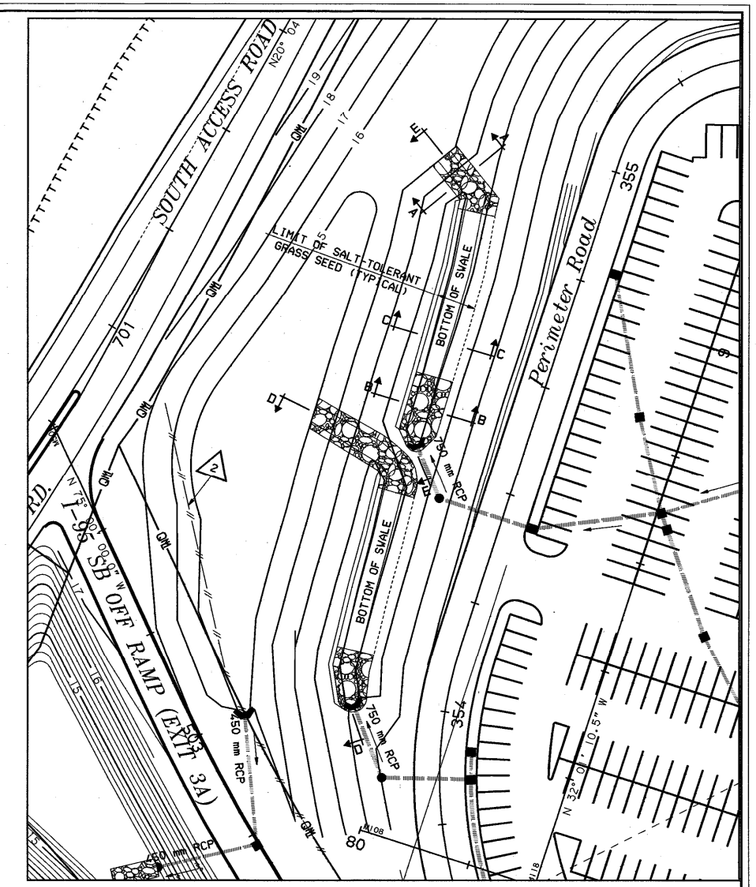
RUNWAY PROTECTION ZONES
PROFILE AND SECTION VIEWS

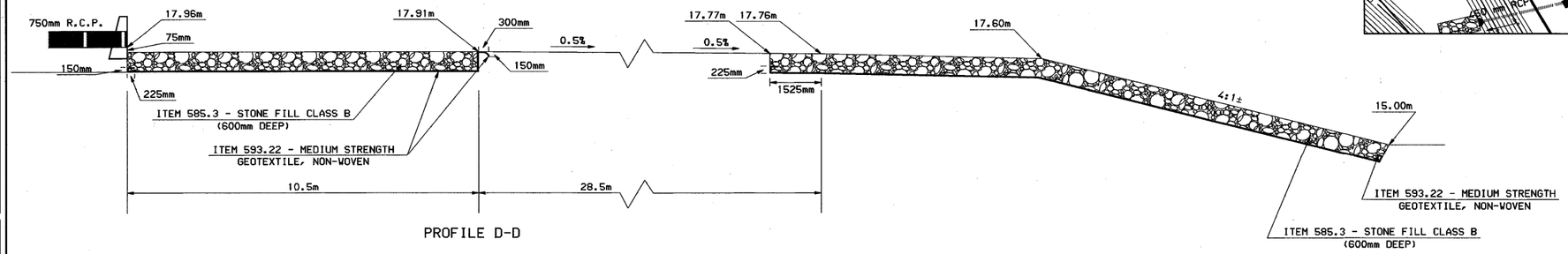
MULTIPLOT NAME	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
ARZ_MULTI_PROF.DAT	MARZ	DETAILS	CM-5379(017)	12250	26	282



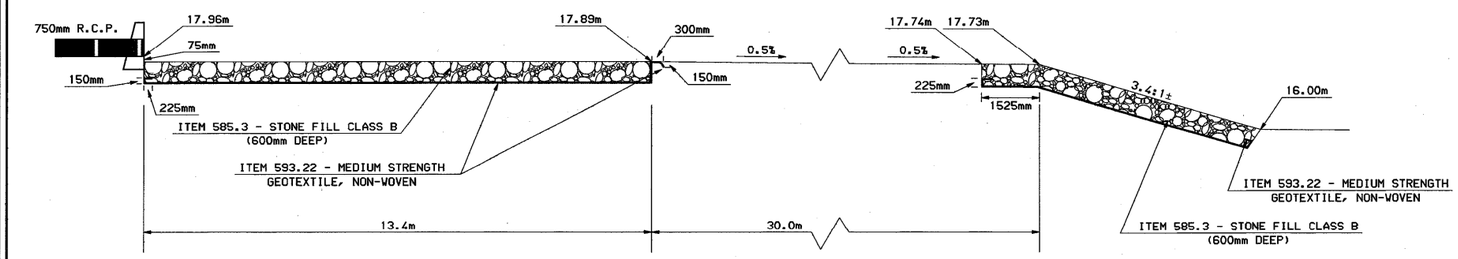


TYPICAL TREATMENT
SWALE SECTION VIEWS
SCALE : 1:75





PROFILE D-D



PROFILE E-E

TYPICAL TREATMENT
SWALE PROFILE VIEWS
SCALE : 1:75

METRIC

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION

NOTEBOOKS

	BOOK	PAGE
	BOOK	PAGE
	BOOK	PAGE

	DATE
EXISTING DETAIL	
PROPOSED DESIGN	DATE
SHEET CHECKED A. KING	DATE 8/98
CADD PLOT E. RICHARDSON	DATE 8/98
AS BUILT DETAILS	DATE

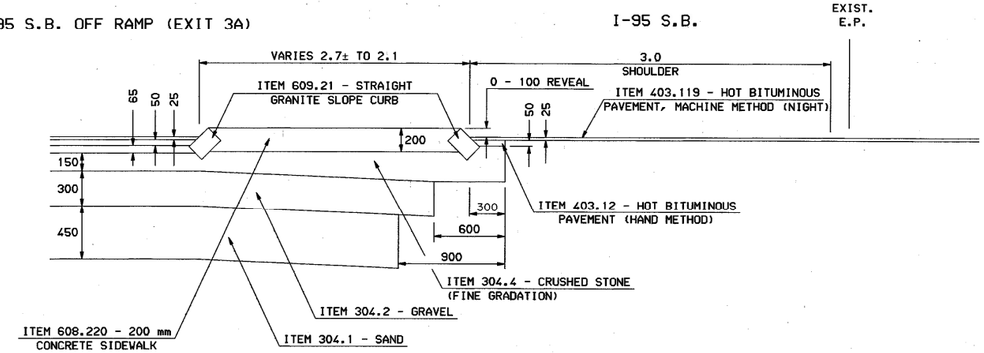
STATE OF NEW HAMPSHIRE

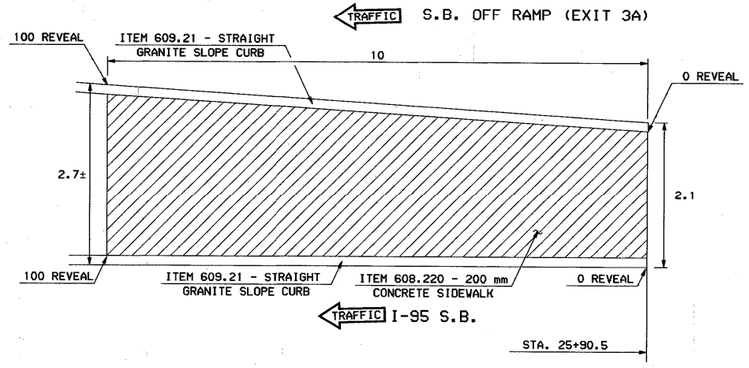
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

DRAINAGE TREATMENT
SWALE DETAILS

MULTI-PLOT	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
SWALE_MULTI	SWALE1	DETAILS	CM-5379(017)	12250	27	282

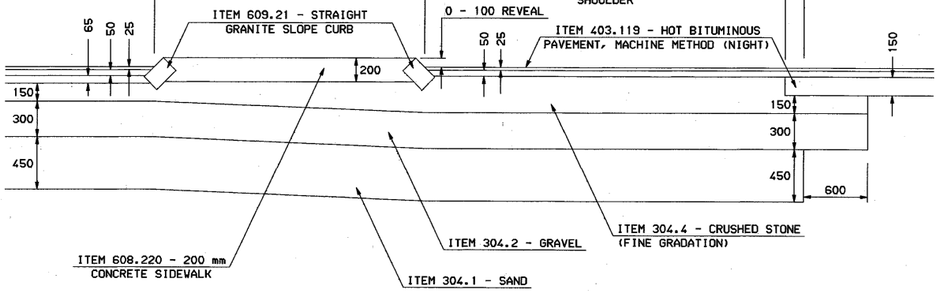
I-95 S.B. OFF RAMP (EXIT 3A)

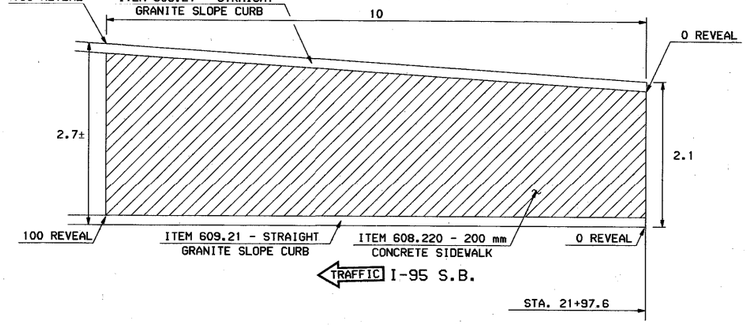




I-95 S.B. DECELERATION RAMP NOSE
STA. 25+80.5 - 25+90.5

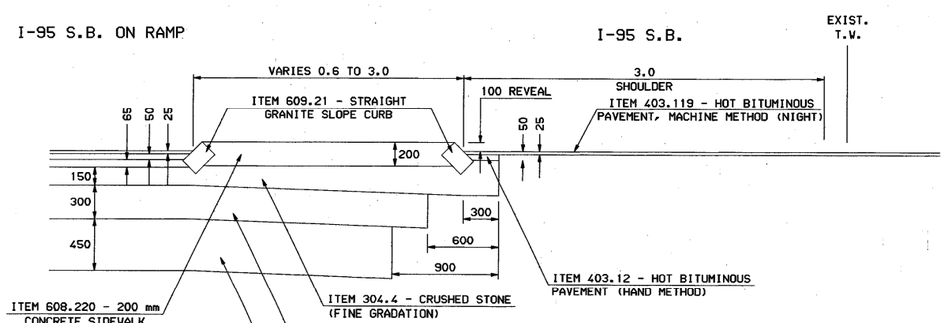
I-95 S.B. OFF RAMP (EXIT 3B)

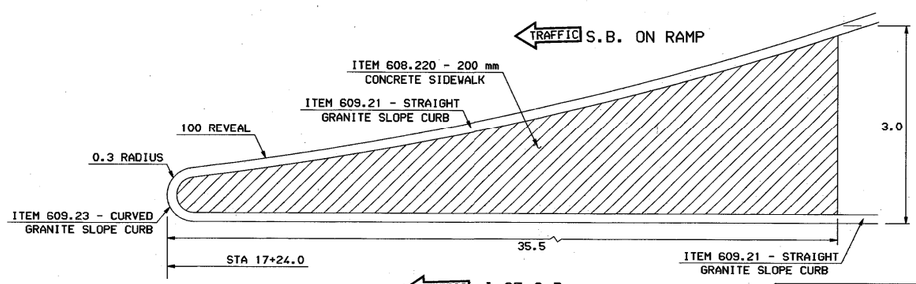




I-95 S.B. DECELERATION RAMP NOSE
STA. 21+87.6 - 21+97.6

I-95 S.B. ON RAMP





NOT TO SCALE

I-95 S.B. ACCELERATION RAMP NOSE
STA. 17+24.0 - 17+79.5

METRIC

REVISIONS AFTER PROPOSAL

NUMBER	DESCRIPTION	STATION	DATE

NOTEBOOKS

	BOOK	PAGE
	BOOK	PAGE
	BOOK	PAGE

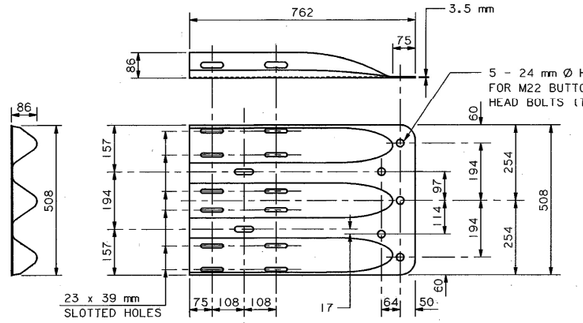
	DATE
EXISTING DETAIL	
PROPOSED DESIGN	
SHEET CHECKED	8-20-98
J. KIROUAC	
AS BUILT DETAILS	

STATE OF NEW HAMPSHIRE

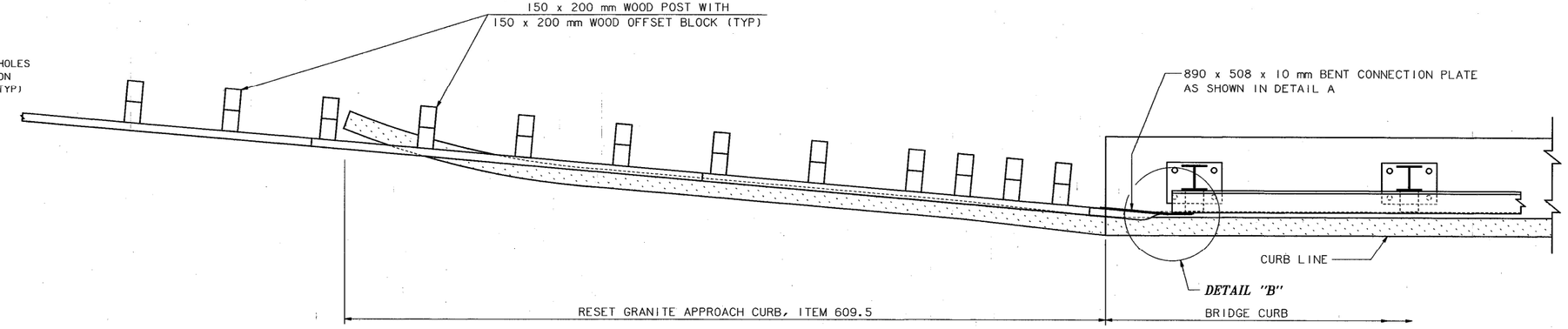
DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF HIGHWAY DESIGN

RAMP NOSE DETAIL

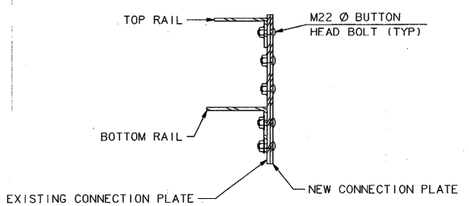
WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
RAMPNOSE	DETAILS	CM-5379(017)	12250	28	282



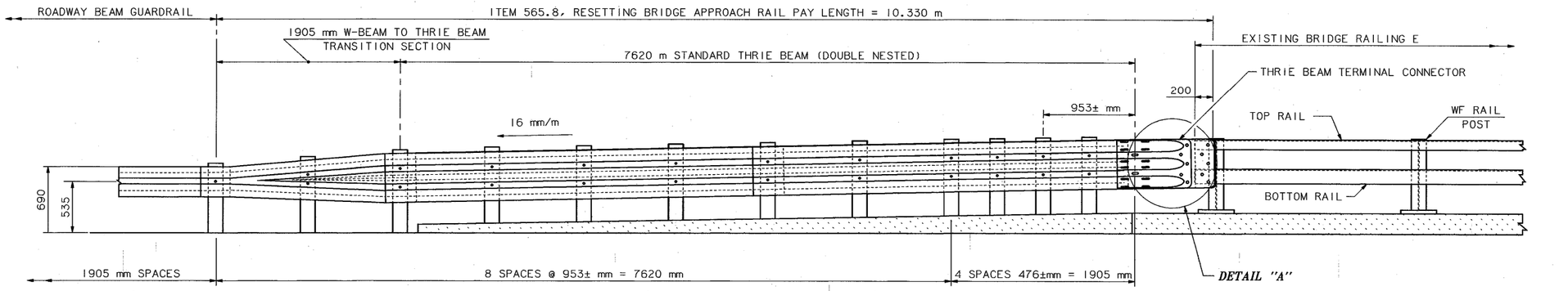
THRIE-BEAM TERMINAL CONNECTOR
SCALE = 1:10



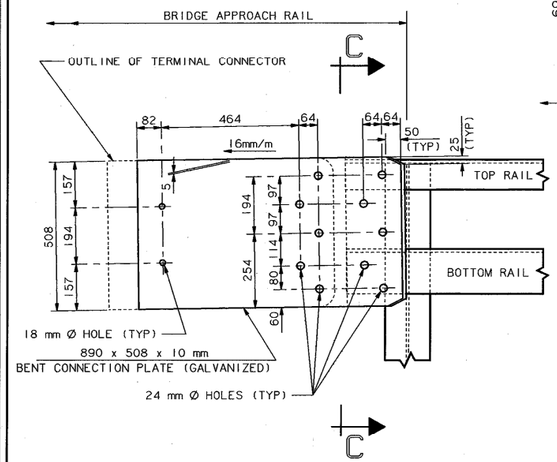
PLAN VIEW - APPROACH END
SCALE = 1:25



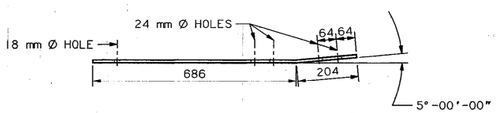
SECTION C-C (CONNECTION PLATE)
SCALE = 1:10



ELEVATION VIEW - APPROACH END
SCALE = 1:25

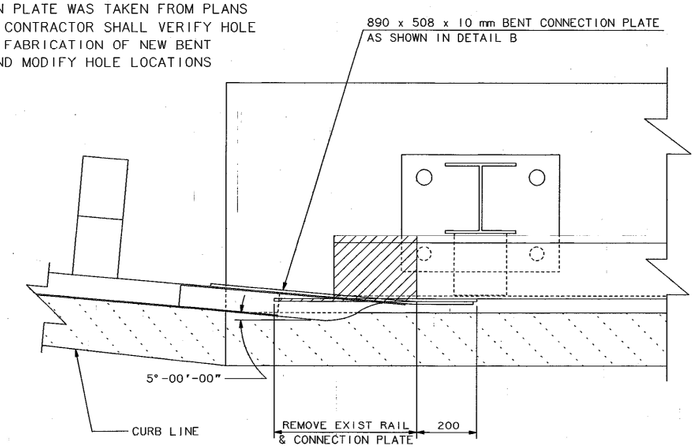


DETAIL A
SCALE = 1:10



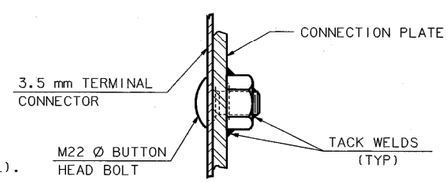
PLAN VIEW - BENT CONNECTION PLATE
SCALE = 1:10

NOTE:
BOLT HOLE PATTERN IN TERMINAL CONNECTOR AND EXISTING CONNECTION PLATE WAS TAKEN FROM PLANS FOR PROJECT 11994. CONTRACTOR SHALL VERIFY HOLE LOCATIONS PRIOR TO FABRICATION OF NEW BENT CONNECTION PLATE AND MODIFY HOLE LOCATIONS AS NEEDED.



RAIL REMOVAL LIMITS
SCALE = 1:10

NOTE:
NUTS FOR ATTACHMENT OF TERMINAL CONNECTOR TO PLATE SHALL BE FINGER TIGHT AND BACKED OFF 1/8 TURN PRIOR TO TACK WELDING (SEE DETAIL). TOUCH UP WELDED AREAS WITH 2 COATS OF ZINC RICH PRIMER AFTER WELDING. ALL BOLTS IN SLOTTED HOLES SHALL BE CENTERED AT 45°F. COST OF ALL NEW BOLTS, NUTS, PLATES SHALL BE INCLUDED IN ITEM 565.8.



TERMINAL CONNECTOR NUT DETAIL
(EXPANSION END ONLY)
HALF SCALE

THRIE-BEAM APPROACH TO STEEL BRIDGE RAIL

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE DESIGN

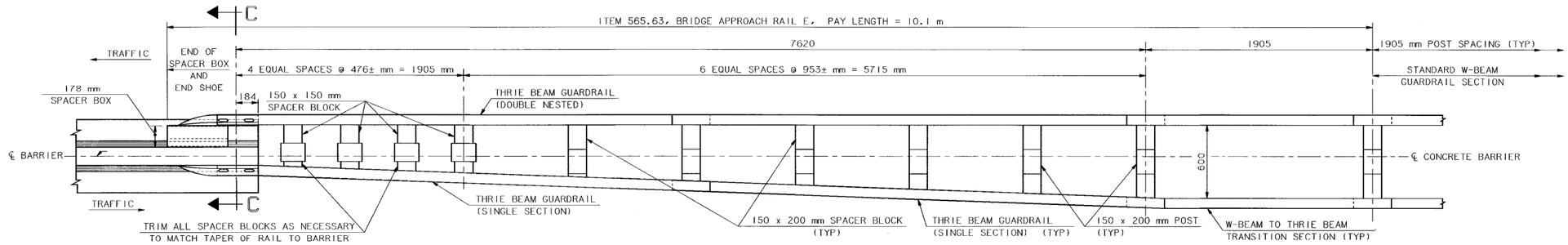
TOWN PORTSMOUTH — BRIDGE NO. ----- — STATE PROJECT 12250
LOCATION PARK-N-RIDE WITH BUS TERMINAL NEAR I-95/ EXIT 3 & N.H. RTE. 33

BRIDGE APPROACH RAIL - APPROACH END

WINDOW NAME	THRIE-AP
DRAWING NAME	THRIRAIL
*.FGB FILE NAME	THRIRAIL
SHEET SCALE	B12418.BR-USER1B
	AS NOTED

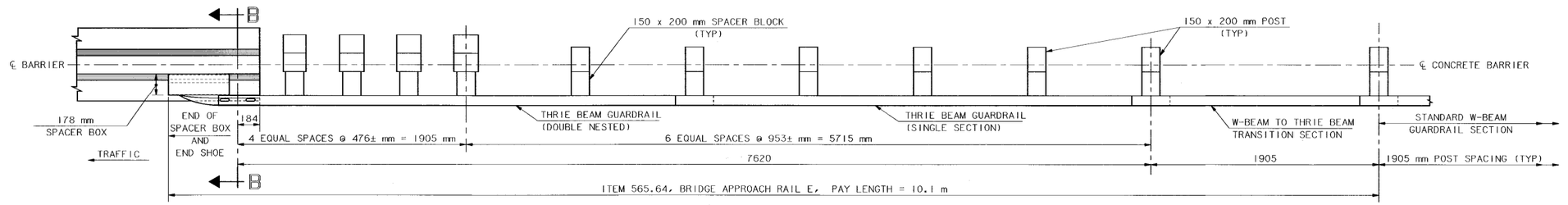
REVISIONS AFTER PROPOSAL	BY	DATE	BY	DATE
DESIGNED	XX	XX	CHECKED	XX	XX
DRAWN	GMC	5/98	CHECKED	RRA	5/98
QUANTITIES	XX	XX	CHECKED	XX	XX
ISSUE DATE				
REV. DATE				

FEDERAL PROJECT NO. CM-5379(017) — SHEET NO. 29 — BRIDGE SHEET -- OF -- — FILE NUMBER — TOTAL SHEETS 282



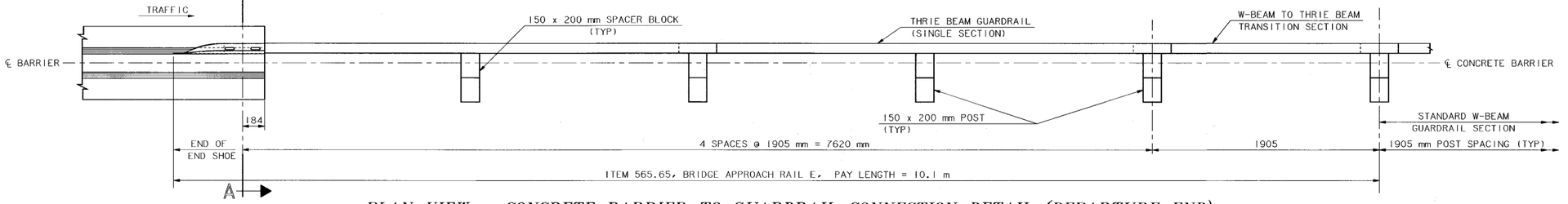
PLAN VIEW – CONCRETE BARRIER TO GUARDRAIL CONNECTION DETAIL (DOUBLE FACED)

SCALE: 1:20



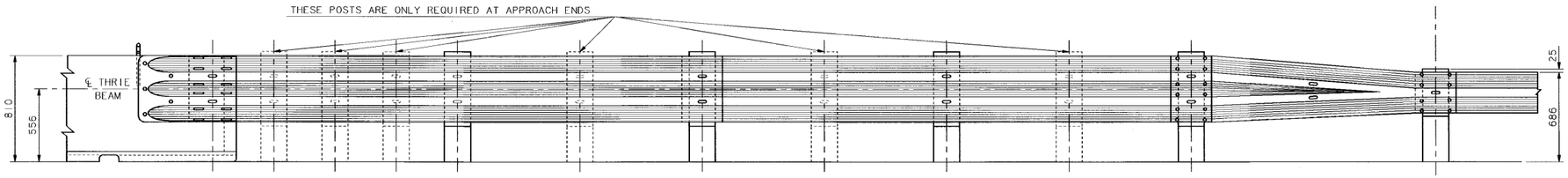
PLAN VIEW – CONCRETE BARRIER TO GUARDRAIL CONNECTION DETAIL (APPROACH END)

SCALE: 1:20



PLAN VIEW – CONCRETE BARRIER TO GUARDRAIL CONNECTION DETAIL (DEPARTURE END)

SCALE: 1:20



TYPICAL ELEVATION VIEW – CONCRETE BARRIER TO THRIE BEAM CONNECTION DETAIL

SCALE: 1:20

NOTES:

(1) ALL THRIE BEAM RAIL, INCLUDING TRANSITION SECTION, SHALL BE GALVANIZED 2.7 mm. ALL TERMINAL CONNECTORS SHALL BE GALVANIZED 3.4 mm.

(2) CONNECTIONS TO CONCRETE BARRIER SHALL BE APPROVED M20 GALVANIZED HIGH STRENGTH THROUGH BOLTS IN CORE DRILLED HOLES. CHECK ACTUAL HOLE SPACING BEFORE CORING BOLT HOLES.

(3) ALL CONNECTIONS FOR THE THRIE BEAM RAIL AND TERMINAL CONNECTOR SHALL LAP IN THE DIRECTION OF TRAFFIC.

(4) FOR THRIE BEAM STANDARD SECTION DETAILS SEE BRIDGE SHEET OF .

(5) FOR THRIE BEAM TO CONCRETE BARRIER CONNECTION DETAILS SEE BRIDGE SHEET OF .

PLANS DRAWN USING METRIC DIMENSIONS

WINDOW NAME	MTRCON-1
DRAWING NAME	MTRCON-1
*.FGB FILE NAME	MTHRIE-BEAM
SHEET SCALE	AS NOTED

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE DESIGN

TOWN | BRIDGE NO. | STATE PROJECT

LOCATION

THRIE BEAM TO CONCRETE BARRIER – (DIVIDED HIGHWAY)

REVISIONS AFTER PROPOSAL	BY	DATE

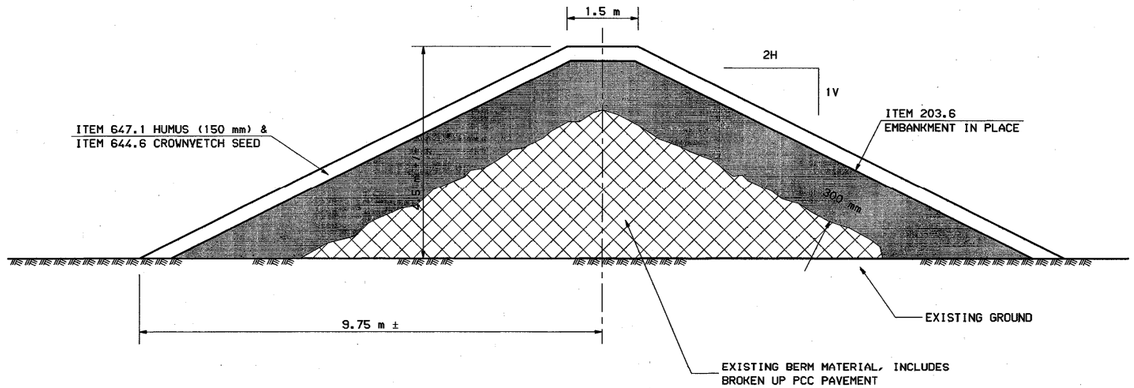
DESIGNED	NHDOT		CHECKED		
DRAWN	GBH/KCD	2/98	CHECKED	CMW	2/98
QUANTITIES			CHECKED		
ISSUE DATE	2/98	FEDERAL PROJECT NO.	SHEET NO.		
REV. DATE		CM-5379(017)	30		

BRIDGE SHEET -- OF --

FILE NUMBER

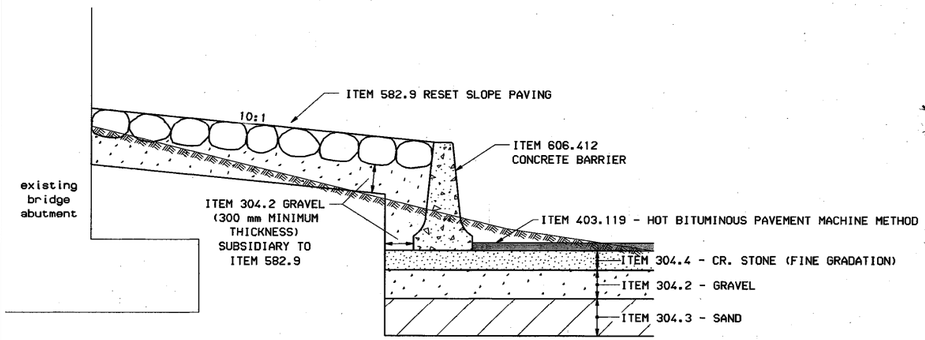
TOTAL SHEETS 282

MAY 21 1998



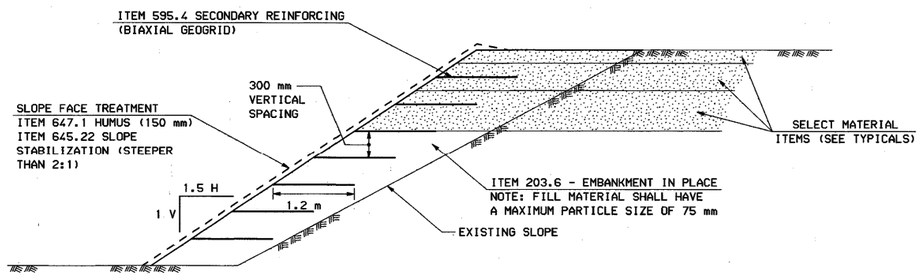
BERM SECTION

NOT TO SCALE
SOUTH ACCESS ROAD
STA. 707+50± TO STA. 708+90±

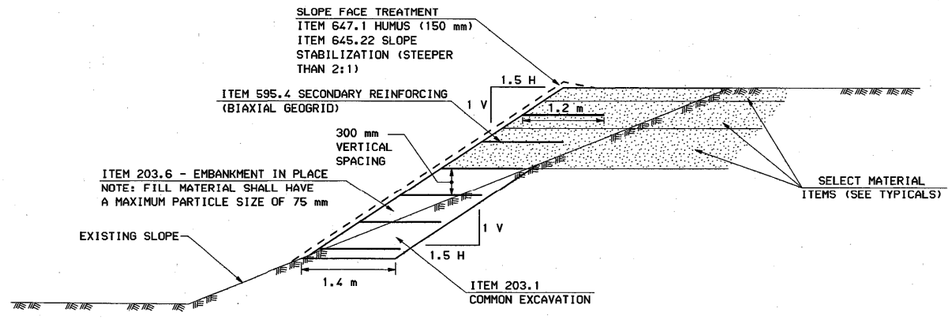


BARRIER DETAIL

NOT TO SCALE
I-95 SOUTHBOUND
STA. 23+56± TO STA. 23+83±



CASE I



CASE II

1.5H:1V EMBANKMENT SLOPES

NOT TO SCALE
N.H. ROUTE 33
STA. 108+40± TO STA. 111+80± LT.
STA. 109+20± TO STA. 110+60± RT.
STA. 106+40± TO STA. 107+40± RT.

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION

NOTEBOOKS

BOOK		PAGE
BOOK		PAGE
BOOK		PAGE

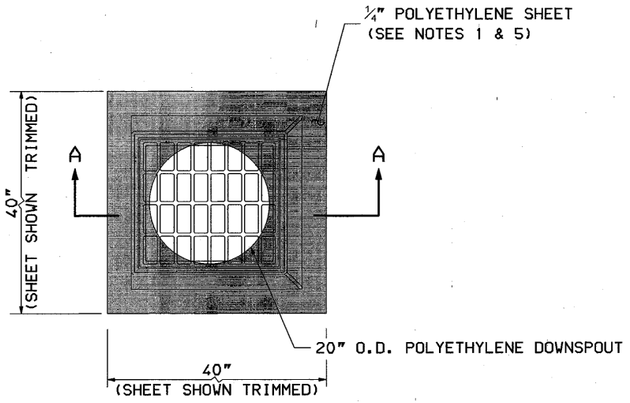
EXISTING DETAIL	DATE	
PROPOSED DESIGN	DATE	
SHEET CHECKED J. KIRDUAC	DATE	8/98
CADD PLOT: J. HEBERT		
AS BUILT DETAILS	DATE	

METRIC

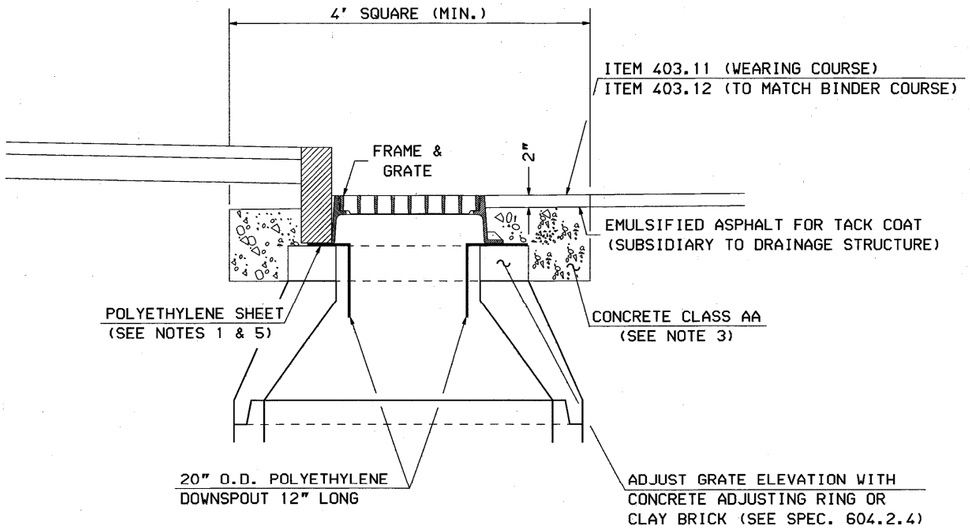
STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF HIGHWAY DESIGN

MISCELLANEOUS DETAILS

WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
MISCDTL1	DETAILS	CM-5379(017)	12250	31	282



PLAN

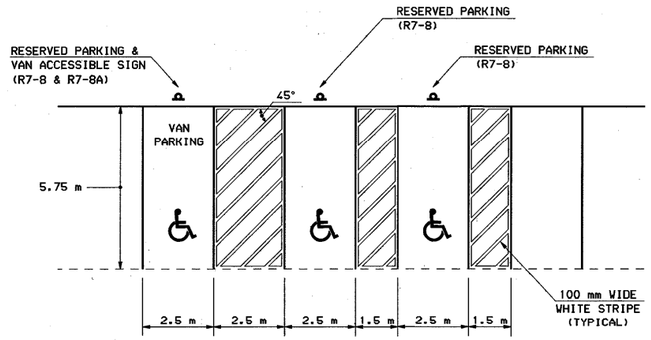


SECTION A-A

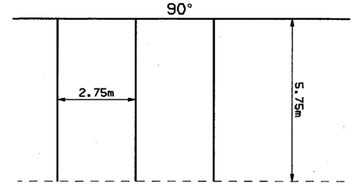
GENERAL NOTES

1. POLYETHYLENE LINER SHALL BE FABRICATED AT THE SHOP. DOWNSPOUT SHALL BE EXTRUSION FILLET WELDED TO THE POLYETHYLENE SHEET.
2. PLACE A CONTINUOUS BEAD OF AN APPROVED SILICONE SEALANT BETWEEN FRAME AND POLETHYLENE SHEET.
3. PLACE CLASS AA CONCRETE TO 2" BELOW THE TOP OF GRATE ELEVATION (SUBSIDIARY TO DRAINAGE STRUCTURE).
4. USE ON DRAINAGE STRUCTURES 4' MIN. DIAMETER ONLY.
5. TRIM POLYETHYLENE SHEET A MAXIMUM OF 4" OUTSIDE THE FLANGE ON THE FRAME FOR THE CATCH BASIN BEFORE PLACING CONCRETE (EXCEPT AS SHOWN WHEN USED WITH CURB).
6. THE CENTER OF THE GRATE & FRAME MAY BE SHIFTED A MAXIMUM OF 6" FROM THE CENTER OF THE DOWNSPOUT IN ANY DIRECTION.

POLYETHYLENE LINER DETAIL
ITEM 604.0007

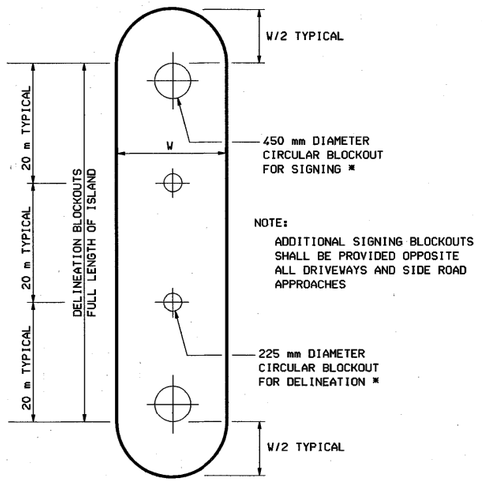


ACCESSIBLE PARKING STALLS
DIMENSIONS 90°
SCALE 1:100



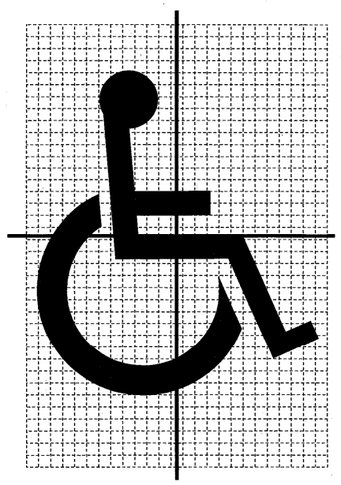
PARKING STALLS
DIMENSIONS 90°
SCALE 1:100

TYPICAL TREATMENT OF RAISED ISLAND TO PROVIDE BLOCKOUTS FOR SIGNING AND DELINEATION



* BLOCKOUTS SHALL BE BACKFILLED WITH 50 mm OF COLD PATCH. BLOCKOUTS AND COLD PATCH ARE SUBSIDIARY TO THE RAISED ISLAND CONSTRUCTION.

RAISED ISLAND BLOCKOUTS
NOT TO SCALE



INTERNATIONAL SYMBOL OF
ACCESSIBILITY DESIGN

PAY QUANTITY FOR EACH ACCESSIBLE PAVEMENT MARKING SYMBOL= 0.24 m2

REVISIONS AFTER PROPOSAL

DESCRIPTION	STATION	STATION	DATE

NUMBER	DATE

NOTEBOOKS

	BOOK	PAGE
	BOOK	PAGE
	BOOK	PAGE

	DATE
EXISTING DETAIL	
PROPOSED DESIGN	DATE
SHEET CHECKED J. KIROUAC	DATE 8/98
AS BUILT DETAILS	DATE

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION ◦ BUREAU OF HIGHWAY DESIGN

MISCELLANEOUS DETAILS

WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
MISCDTL2	DETAILS	CM-5379(017)	12250	32	282

REVISIONS AFTER PROPOSAL

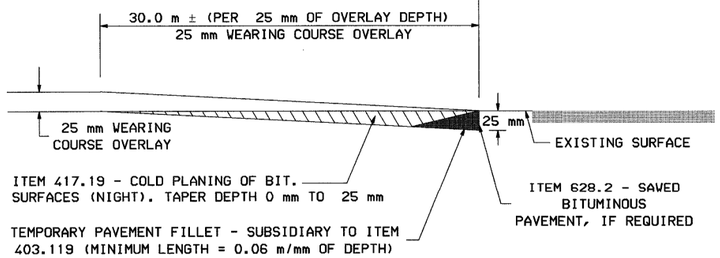
NUMBER	DESCRIPTION	STATION	STATION	DATE

NOTEBOOKS

BOOK	PAGE	BOOK	PAGE
BOOK	PAGE		

EXISTING DETAIL	DATE	
PROPOSED DESIGN	DATE	
SHEET CHECKED	DATE	8-98
J. KIROUAC		
AS BUILT DETAILS	DATE	

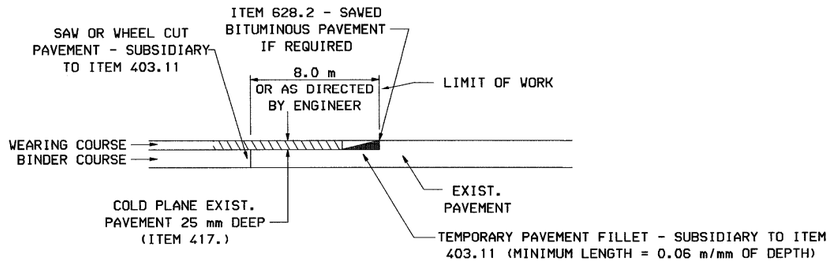
LIMIT OF WORK



NOTE: THE LENGTH OF THE TAPER MAY BE ADJUSTED AS ORDERED TO PROVIDE FOR VARYING FIELD CONDITIONS OR CHANGES IN SINGLE COURSE DEPTH.

OVERLAY PAVEMENT MATCH TYPICAL (I-95)

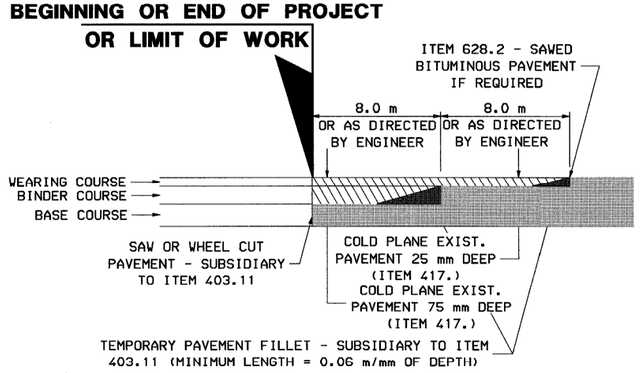
NOT TO SCALE



PAVEMENT MATCH AT SIDE ROADS

NOT TO SCALE
GREENLAND ROAD
SHERBURNE ROAD (GRAFTON RD. INTERSECTION)

BEGINNING OR END OF PROJECT OR LIMIT OF WORK

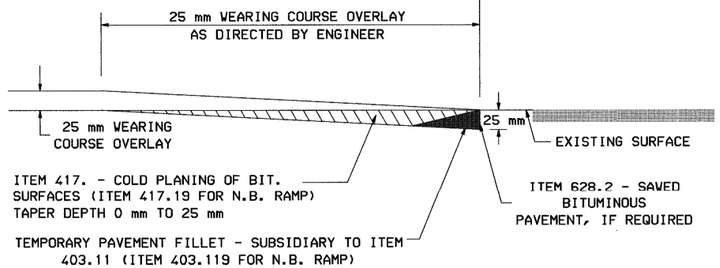


INLAY PAVEMENT MATCH TYPICAL

NOT TO SCALE
N.H. RTE. 33
SOUTH ACCESS ROAD
LOOP ROAD

METRIC

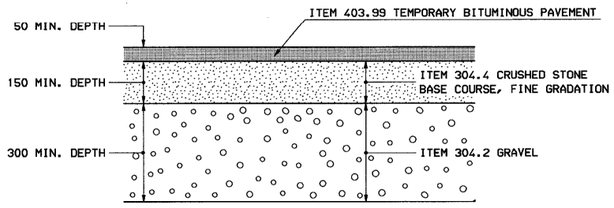
LIMIT OF WORK



NOTE: THE LENGTH OF THE TAPER MAY BE ADJUSTED AS ORDERED TO PROVIDE FOR VARYING FIELD CONDITIONS OR CHANGES IN SINGLE COURSE DEPTH.

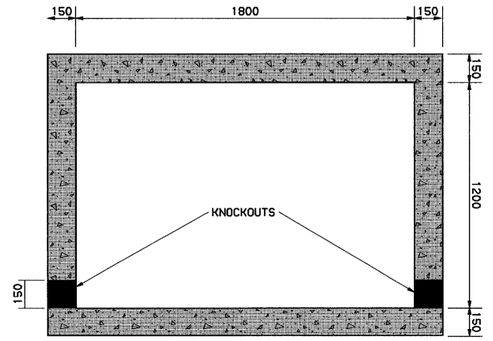
OVERLAY PAVEMENT MATCH TYPICAL

SEWER IMPROVEMENTS ON COUNTRY CLUB LN.
N.B. OFF RAMP (I-95)
NOT TO SCALE

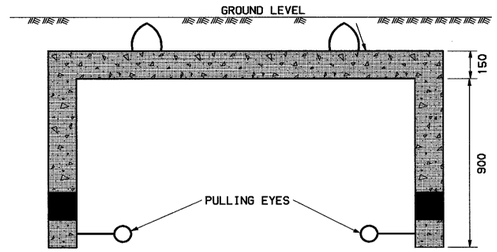


TEMPORARY WIDENING DETAIL

NOT TO SCALE



TOP VIEW



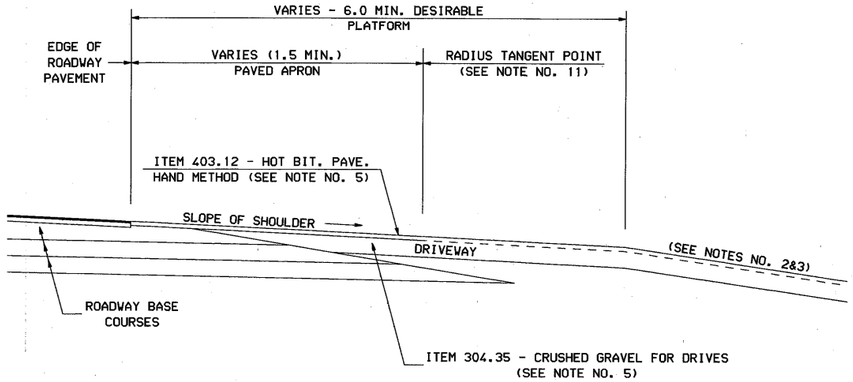
SECTIONAL VIEW
ITEM 614.515 - CONCRETE PULL BOX
NOT TO SCALE

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

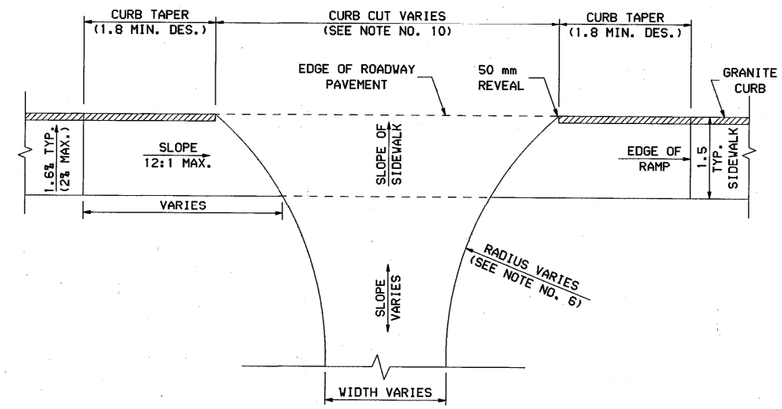
PAVEMENT MATCH TYPICALS

WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
MISCDTL3	DETAILS	CM-5379(017)	12250	33	282

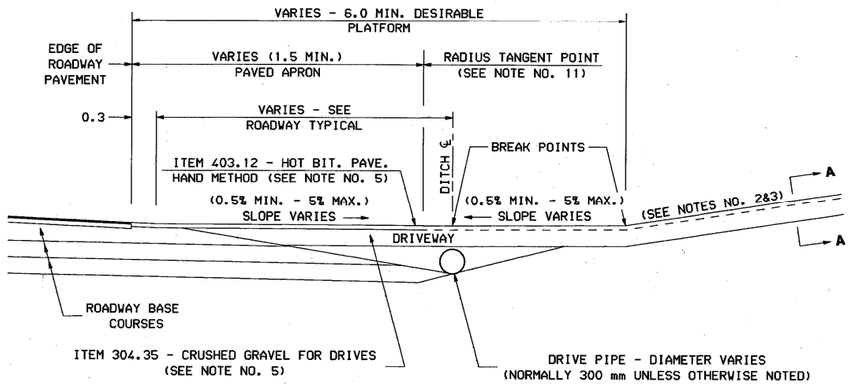
NOTE: REFER TO PAVEMENT LAYOUT PLANS AND CROSS-SECTIONS FOR DRIVEWAY LENGTHS, WIDTHS, RADII, CURB CUTS, GRADES, AND PAVEMENT & BASE COURSE DEPTHS



TYPICAL UNCURBED DRIVE IN FILL SECTION

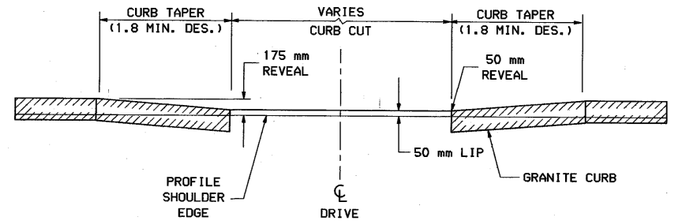


PLAN VIEW WITH SIDEWALK RAMP

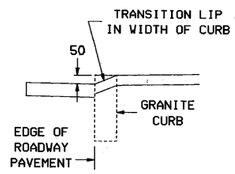


A - A DRIVEWAY CROSS-SECTION

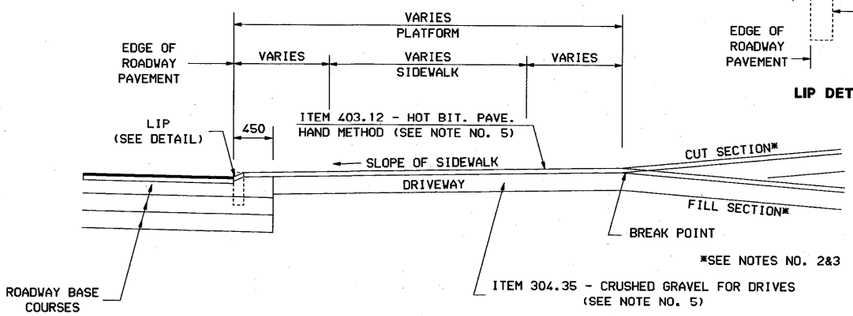
TYPICAL UNCURBED DRIVE IN CUT SECTION



END VIEW



LIP DETAIL



TYPICAL URBAN CURBED DRIVE IN CUT/FILL SECTION

GENERAL NOTES

1. ALL DIMENSIONS SHOWN ARE IN MILLIMETERS OR METERS. WHOLE NUMBERS INDICATE MILLIMETERS, DECIMAL NUMBERS INDICATE METERS UNLESS OTHERWISE NOTED.
2. GRADES OF MAJOR ENTRANCES BEYOND THE PLATFORM SHOULD NOT EXCEED 8%.
3. GRADES OF OTHER DRIVES BEYOND THE PLATFORM SHOULD NOT EXCEED 15%.
4. THE ALGEBRAIC DIFFERENCE BETWEEN TWO ADJACENT GRADES SHOULD NOT EXCEED 10%.
5. PAVEMENT & BASE COURSE DEPTHS FOR RESIDENTIAL DRIVES ARE TYPICALLY 200 mm CRUSHED GRAVEL WITH 50 mm H.B.P. (HAND METHOD) SINGLE COURSE. FOR COMMERCIAL/INDUSTRIAL DRIVES WITH FREQUENT HEAVY TRUCK TRAFFIC, 300 mm CRUSHED GRAVEL WITH 75 mm H.B.P. SHOULD BE USED.
6. FOR DESIGN CRITERIA AND OTHER ADDITIONAL INFORMATION, REFER TO THE NHDOT DRIVEWAY MANUAL.
7. DITCHES ARE RECOMMENDED FOR UNCURBED DRIVEWAYS IN CUT SLOPES.
8. USE SLOPED END SECTIONS ON DRIVE PIPES FOR UNCURBED DRIVEWAYS.
9. CURBING CAN BE FLARED TO FIT DRIVE RADII IF APPROPRIATE OR ENDED AS DETAILED ABOVE.
10. CURB CUTS FOR RESIDENTIAL DRIVES WITH ANGLES OF ENTRY OF 75°-90° ARE TYPICALLY 7.5 m.
11. FOR UNPAVED DRIVES, THE PAVED APRON NORMALLY ENDS AT THE RADIUS TANGENT POINT. SEE PAVEMENT LAYOUT PLANS.

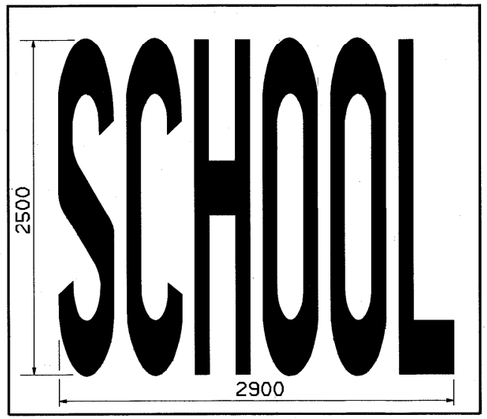
STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF HIGHWAY DESIGN

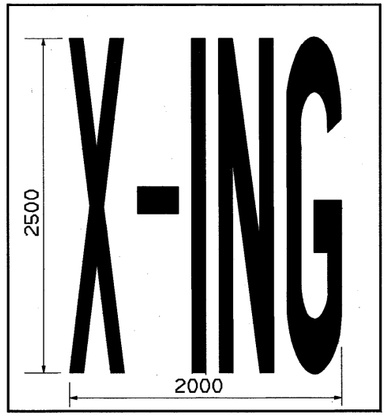
DRIVEWAYS

REVISION DATE	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
8-5-98	MDRIVES	M-DETAIL	CM-5379(017)	12250	34	282

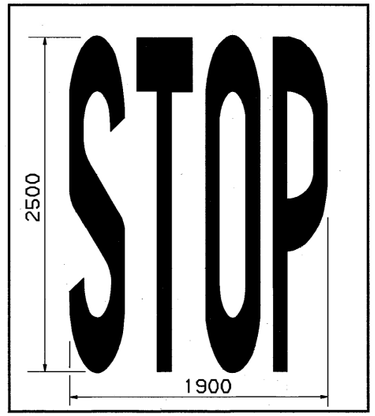
STANDARD WORDS AND SYMBOLS



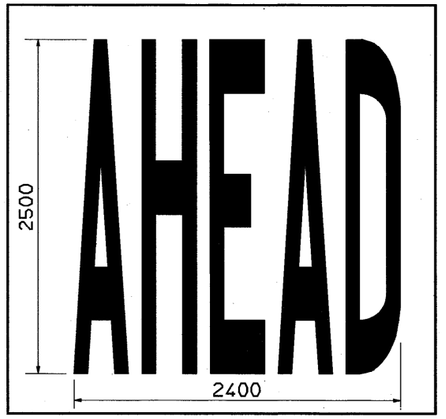
PAY QUANTITY= 3.23 m²



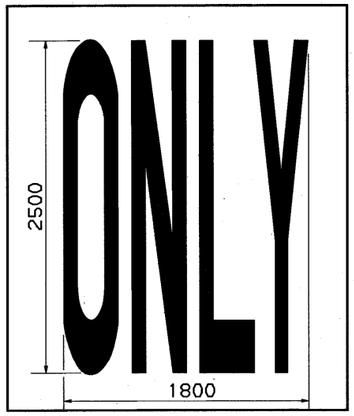
PAY QUANTITY= 1.92 m²



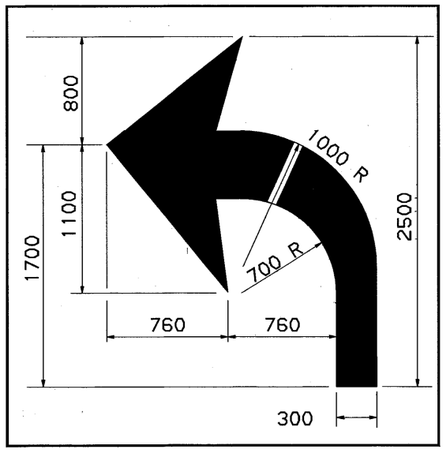
PAY QUANTITY= 2.07 m²



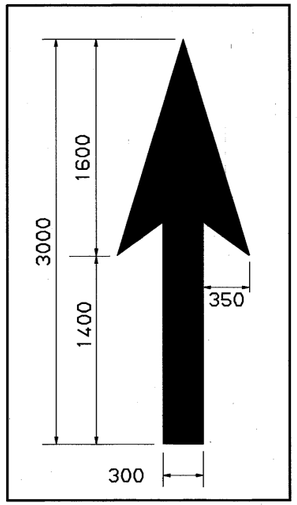
PAY QUANTITY = 2.91 m²



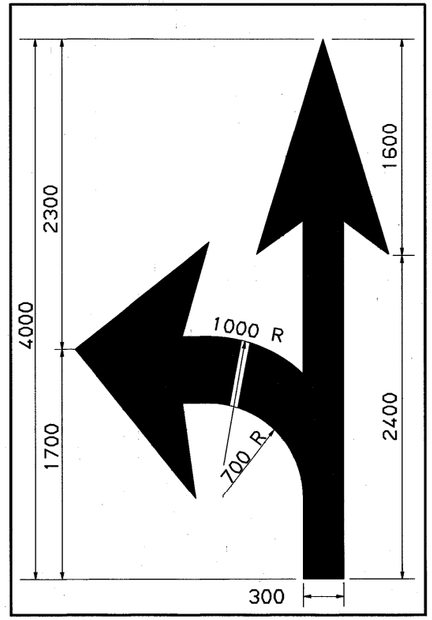
PAY QUANTITY= 2.08 m²



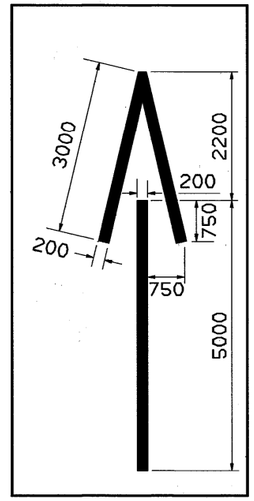
TURN ARROW
(RIGHT TURN OPPOSITE IN KIND)
PAY QUANTITY= 1.58 m²



THROUGH (STRAIGHT) ARROW
PAY QUANTITY= 1.16 m²



COMBINATION ARROW
PAY QUANTITY= 2.68 m²



WRONG-WAY ARROW
PAY QUANTITY= 2.20 m²

GENERAL NOTES :

1. ALL WORDS AND SYMBOLS SHALL BE RETROREFLECTIVE WHITE AND SHALL CONFORM TO THE MUTCD.
2. WORDS AND SYMBOLS SHALL BE CENTERED LATERALLY WITHIN THE LANE. THE LONGITUDINAL DIMENSION SHALL BE PARALLEL TO THE LANE.
3. MULTI-WORD MESSAGES SHALL READ "UP"; THAT IS, THE FIRST WORD SHALL BE NEAREST THE APPROACHING DRIVER.
4. THE WORD "ONLY" SHALL NOT BE USED WITH THROUGH OR COMBINATION ARROWS, AND SHALL NOT BE USED ADJACENT TO A BROKEN LANE LINE. A TURN ARROW SHALL PRECEED THE WORD "ONLY".
5. COMBINATION ARROWS MAY BE COMPRISED OF 2 SINGLE ARROWS (e.g. TURN AND THROUGH ARROWS). HOWEVER, THE SHAFTS OF THE ARROWS SHALL COINCIDE AS SHOWN.
6. PREFORMED TAPE WORDS AND SYMBOLS SHALL BE PRE-CUT BY THE MANUFACTURER.
7. WRONG-WAY ARROWS SHALL NOT BE SUBSTITUTED FOR THROUGH ARROWS.
8. LONGITUDINAL SPACING BETWEEN SUCCESSIVE WORDS AND/OR SYMBOLS SHOULD BE AT LEAST 4 TIMES THE HEIGHT OF THE LARGEST CHARACTER.
9. THE WORD OR SYMBOL NEAREST THE INTERSECTION SHALL BE 6.0 m FROM THE END OF THE ADJACENT LANE LINE OR STOP LINE (IF PRESENT).

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS OR METERS.
WHOLE NUMBERS INDICATE MILLIMETERS, DECIMAL NUMBERS INDICATE METERS UNLESS OTHERWISE NOTED.

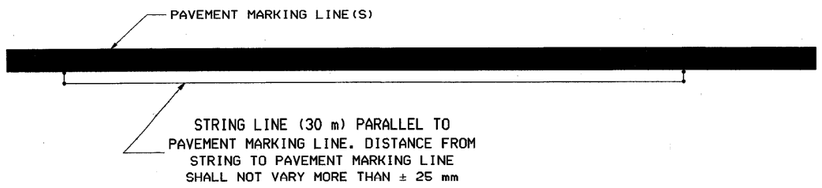
STATE OF NEW HAMPSHIRE — 1 OF 2

DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF HIGHWAY DESIGN

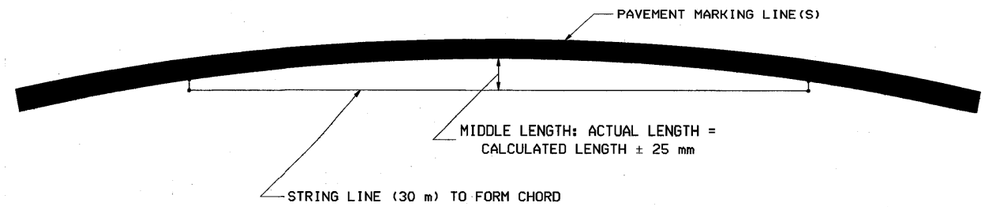
WORDS AND SYMBOLS

REVISION DATE	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
10-1-97	PM-2D	M-DETAIL	CM-5379(017)	12250	35	282

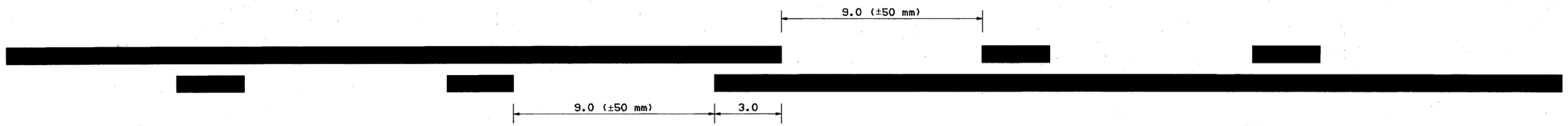
TOLERANCES FOR PAVEMENT MARKING LINES



TANGENT SECTION



CURVED SECTION



TYPICAL "CROSS-SWITCH" PASSING ZONE

TYPICAL BROKEN LINE

DISTANCE BETWEEN DOUBLE LINES
(BROKEN OR SOLID)

DOUBLE LINES

GENERAL NOTES

1. ALL PAVEMENT MARKINGS SHALL BE IN CONFORMANCE WITH THESE STANDARDS AND THE CURRENT EDITION OF *MUTCD*.
2. WIDTH OF LINES SHALL VARY NO MORE THAN ± 6 mm FROM THAT SPECIFIED.
3. THE WET FILM THICKNESS OF A PAINTED LINE SHALL BE A MINIMUM OF 500 MICROMETERS THROUGHOUT THE ENTIRE WIDTH AND LENGTH OF LINE SPECIFIED. OVERSPRAY SHALL BE KEPT TO AN ABSOLUTE MINIMUM.
4. BROKEN LINES SHALL BEGIN AND END WITH THE NEAREST FULL CYCLE OF BROKEN LINE.
5. SOLID LONGITUDINAL LINES SHALL BEGIN AND END WITHIN 50 mm OF A LAYOUT SYMBOL INDICATING THE END OF THE LINE, OR WITH A FULL CYCLE OF BROKEN LINE (IF APPROPRIATE).

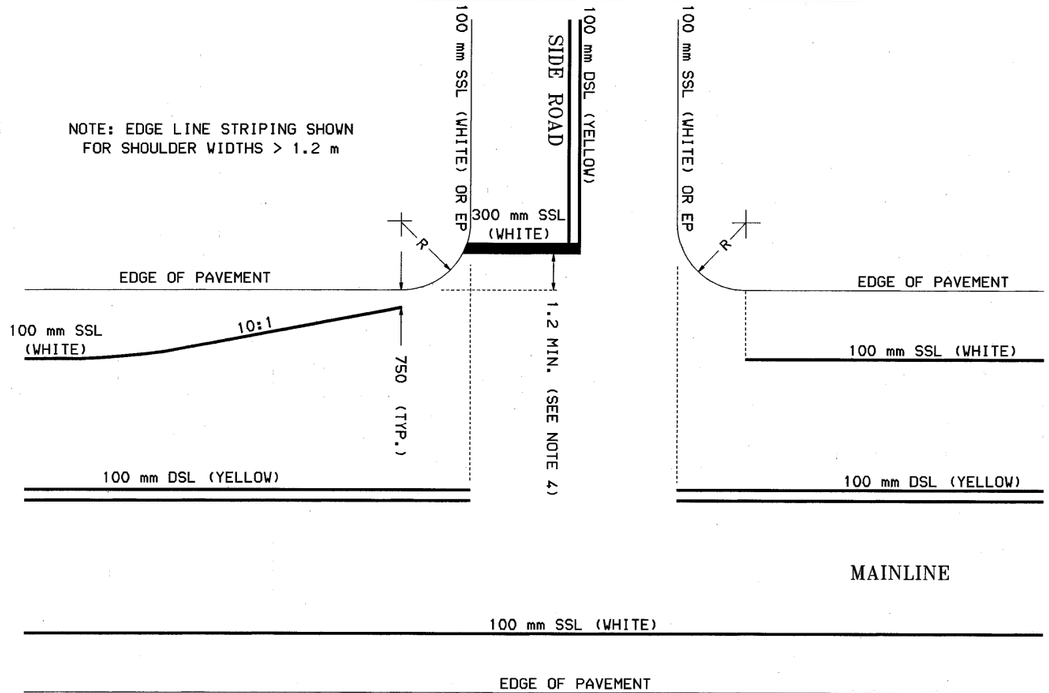
ALL DIMENSIONS SHOWN ARE IN MILLIMETERS OR METERS.
WHOLE NUMBERS INDICATE MILLIMETERS, DECIMAL NUMBERS INDICATE METERS UNLESS OTHERWISE NOTED.

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

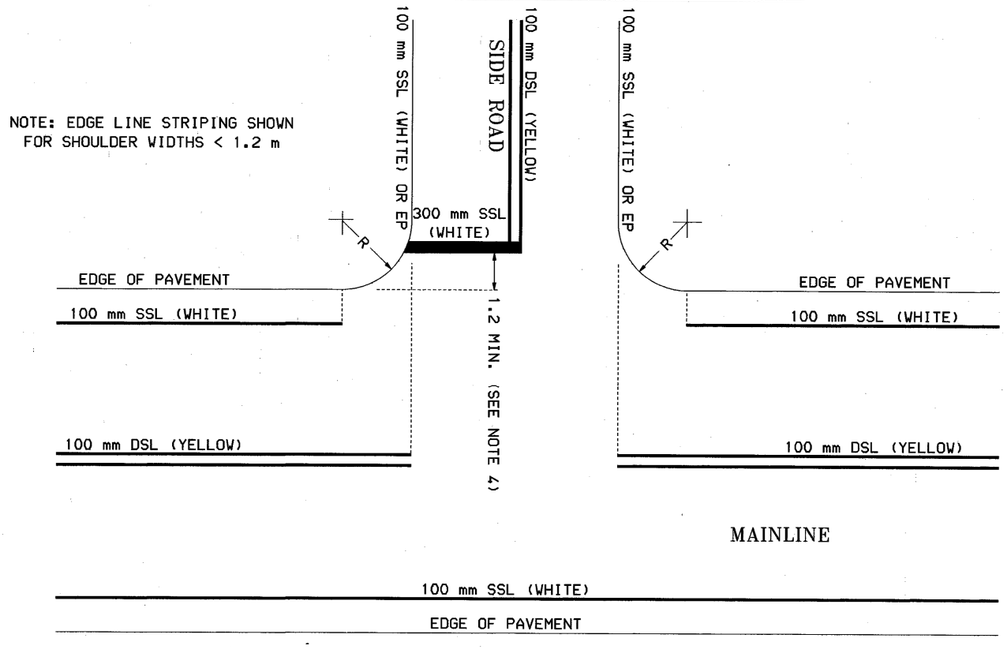
TOLERANCES FOR PAVEMENT MARKING LINES

REVISION DATE	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
10-1-97	PM-1D	M-DETAIL	CM-5379(017)	12250	36	282

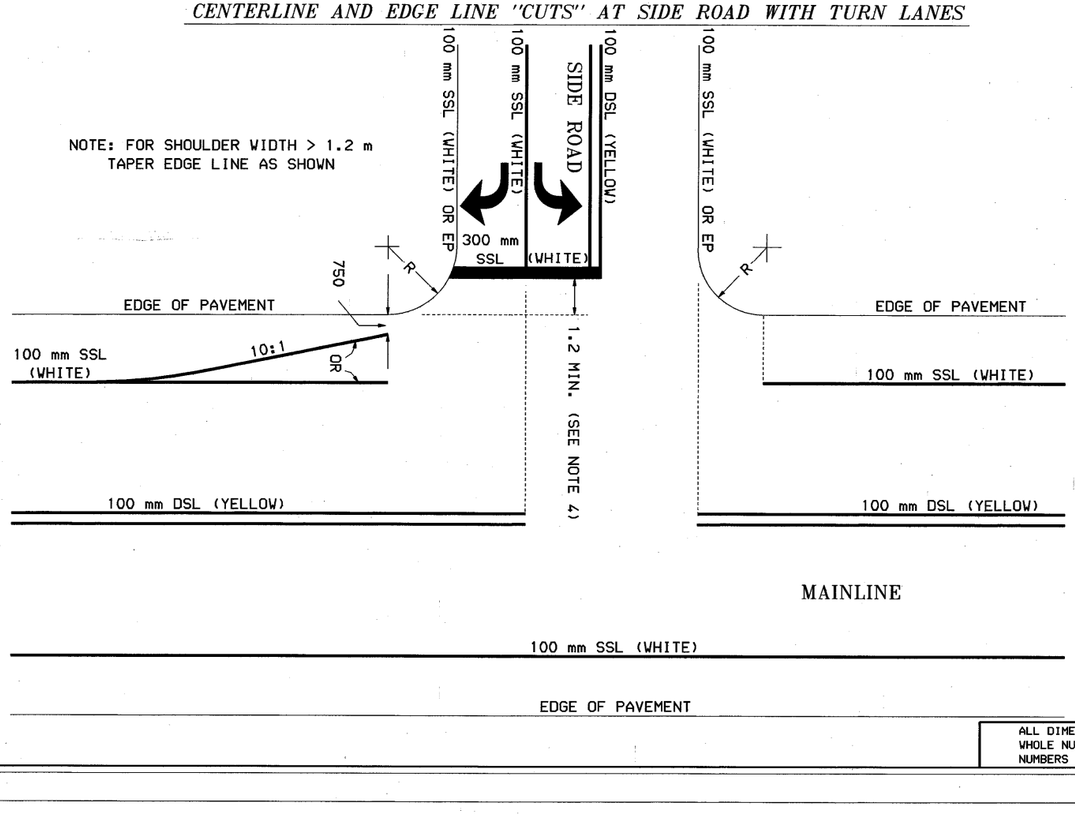
CENTERLINE AND EDGE LINE "CUTS" AT SIDE ROAD



CENTERLINE AND EDGE LINE "CUTS" AT SIDE ROAD



CENTERLINE AND EDGE LINE "CUTS" AT SIDE ROAD WITH TURN LANES



GENERAL NOTES

1. EDGE LINE DETAILS SHOWN ARE FOR MAINLINE ROADWAYS WITHOUT TURN LANES. THE PRESENCE OF TURN LANES MAY REQUIRE DIFFERENT EDGE LINE TREATMENTS.
2. EDGE LINES ON SIDE ROADS, WHEN CALLED FOR, SHALL FOLLOW THE ABOVE MAINLINE TYPICALS. EDGE LINES SHALL NOT BE CONTINUOUS AROUND THE MAINLINE/ SIDE ROAD RADIUS.
3. CENTERLINE SHALL BE CONTINUOUS PAST DRIVEWAYS. CENTERLINE MAY OR MAY NOT BE CONTINUOUS THROUGH MINOR SIDE ROAD OR PRIVATE ROAD INTERSECTIONS. CONTACT BUREAU OF TRAFFIC.
4. LOCATION OF THE STOP LINE MAY VARY DUE TO INTERSECTION SIGHT DISTANCE AND VEHICLE TURNING RADIUS, AND MAY NOT COINCIDE WITH THE LOCATION OF THE STOP SIGN.

LEGEND

SSL() = SINGLE SOLID LINE(COLOR)
DSL() = DOUBLE SOLID LINE(COLOR)
DL() = DOUBLE LINE - SOLID W/BROKEN(COLOR) (NOT SHOWN)
SBL() = SINGLE BROKEN LINE(COLOR) (NOT SHOWN)
DBL() = DOUBLE BROKEN LINE(COLOR) (NOT SHOWN)

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS OR METERS. WHOLE NUMBERS INDICATE MILLIMETERS, DECIMAL NUMBERS INDICATE METERS UNLESS OTHERWISE NOTED.

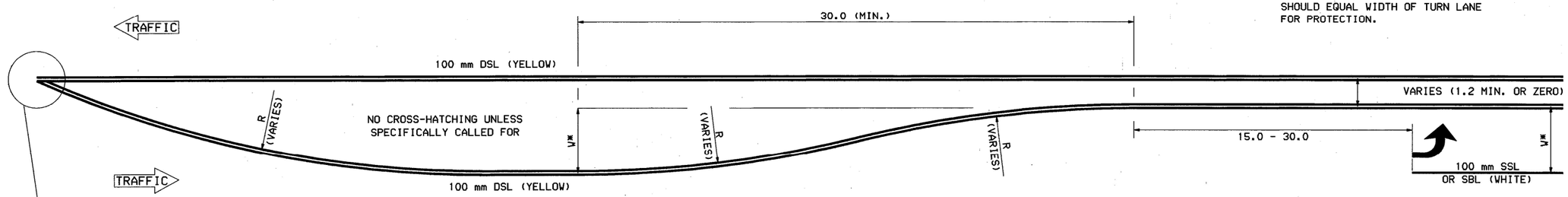
STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF HIGHWAY DESIGN

PAVEMENT MARKINGS AT MINOR INTERSECTIONS

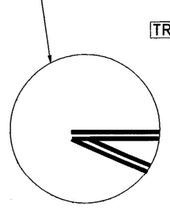
REVISION DATE	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
10-1-97	PM-3D	M-DETAIL	CM-5379(017)	12250	37	282

PAINTED ISLAND DETAILS

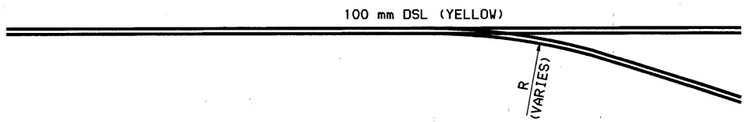


* WIDTH OF TURN "POCKET" SHOULD EQUAL WIDTH OF TURN LANE FOR PROTECTION.

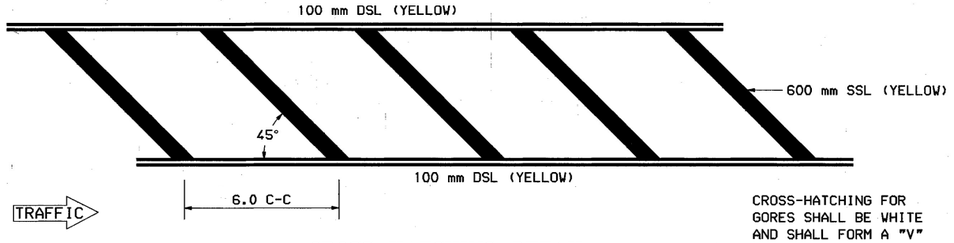
PAINTED ISLAND WITH LEFT TURN LANE



TYPICAL END TREATMENT

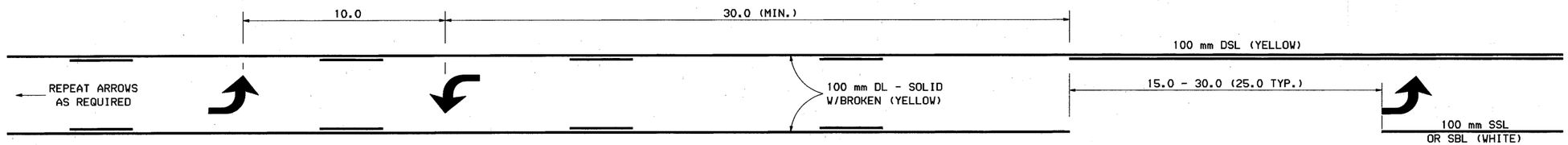


DIVERGING (OR CONVERGING) LINES FOR PAINTED ISLANDS

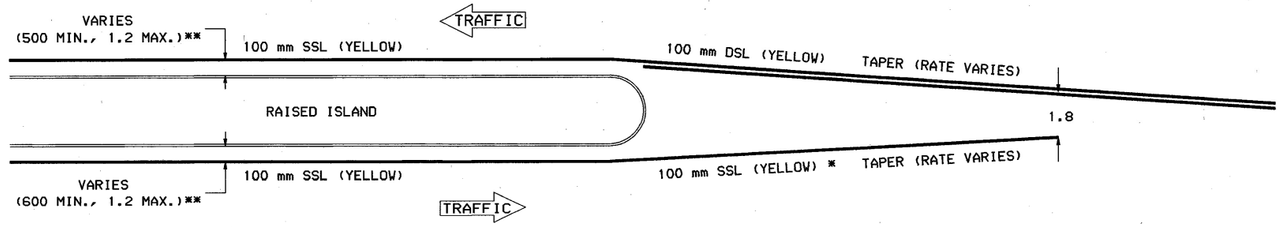


CROSS-HATCHING DETAIL
(TO BE USED ONLY WHEN SPECIFIED)

CROSS-HATCHING FOR GORES SHALL BE WHITE AND SHALL FORM A "V" WITH THE APEX TOWARD APPROACHING TRAFFIC.



SINGLE LANE, TWO-WAY LEFT TURN WITH LEFT TURN ONLY



STRIPING AT ENDS OF RAISED ISLANDS

* 100 mm DSL MAY BE USED IN LIEU OF SSL BEYOND RAISED ISLAND. IN THIS CASE BOTH LINES SHALL CONVERGE TO FORM ONE DOUBLE SOLID LINE.

** FOR OFFSETS GREATER THAN 1.2 m, USE 100 mm DSL (YELLOW) ADJACENT TO ISLAND.

LEGEND

SSL( ) = SINGLE SOLID LINE(COLOR)
DSL( ) = DOUBLE SOLID LINE(COLOR)
DL( ) = DOUBLE LINE - SOLID W/BROKEN(COLOR) (NOT SHOWN)
SBL( ) = SINGLE BROKEN LINE(COLOR) (NOT SHOWN)
DBL( ) = DOUBLE BROKEN LINE(COLOR) (NOT SHOWN)

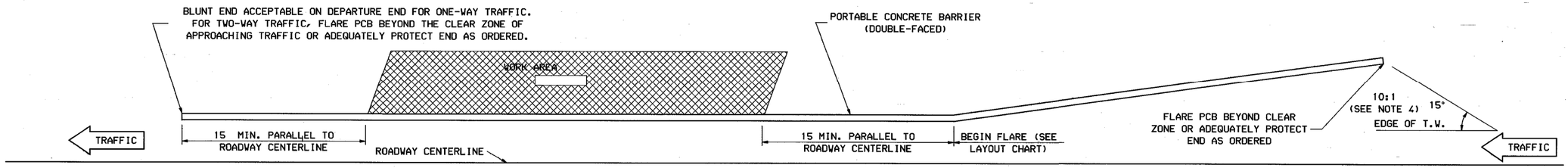
GENERAL NOTES

1. SEE STANDARD NO PM-2 FOR LAYOUT OF WORDS AND SYMBOLS WITHIN TURN LANES.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS OR METERS. WHOLE NUMBERS INDICATE MILLIMETERS, DECIMAL NUMBERS INDICATE METERS UNLESS OTHERWISE NOTED.

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN
PAINTED ISLAND DETAILS

REVISION DATE	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
10-1-97	PM-4D	M-DETAIL	CM-5379(017)	12250	38	282



TRAFFIC OR TRAFFIC

(SEE NOTE ABOVE)

LAYOUT OF PORTABLE CONCRETE BARRIER

(NTS)

PORTABLE CONCRETE BARRIER LAYOUT			
OPERATING SPEED	DESIRABLE LATERAL OFFSET FROM T.W. **	MAXIMUM FLARE RATE * (FREE-STANDING)	MINIMUM LENGTH OF PCB SYSTEM
≤ 50 km/h	1.1 m	7:1	
60 km/h	1.4 m	8:1	
80 km/h	2.0 m	11:1	
100 km/h	2.4 m	14:1	
110 km/h	2.8 m	15:1	
ALL SPEEDS	4.5 m MAX. ***		30 m

* MEASURE FLARE FROM A LINE PARALLEL TO THE ROADWAY ℄, WHETHER ON A CURVE OR A TANGENT.

** FOR RESTRICTED SITE CONDITIONS, LESSER OFFSETS MAY BE PERMITTED BY THE ENGINEER.

*** TO REDUCE POTENTIAL FOR HIGH-ANGLE IMPACTS (>15°)

GENERAL NOTES

1. CONCRETE BARRIER SHALL BE FURNISHED BY THE CONTRACTOR AND PAID AS ITEM 606.417 - PORTABLE CONCRETE BARRIER FOR TRAFFIC CONTROL. END TREATMENTS AND CONNECTIONS TO EXISTING BARRIERS, WHEN REQUIRED, SHALL BE SUBSIDIARY TO ITEM 606.417.
2. THE CONTRACTOR SHALL FURNISH AND INSTALL APPROVED RETROREFLECTIVE DELINEATORS AT 7.5 m INTERVALS ALONG THE TOP AND/OR 300 mm DOWN THE SIDE OF THE PORTABLE CONCRETE BARRIER, SUBSIDIARY TO ITEM 606.417. THE COLOR OF DELINEATORS SHALL, IN ALL CASES, CONFORM TO THE COLOR OF EDGE LINE MARKINGS. (DELINEATORS SUPPLEMENT, BUT DO NOT REPLACE, THE NEED FOR RETROREFLECTIVE SOLID EDGE LINE MARKINGS.)
3. UNPROTECTED OPENINGS IN PORTABLE CONCRETE BARRIER WILL NOT BE PERMITTED, UNLESS SPECIFICALLY AUTHORIZED BY THE ENGINEER.
4. A 10:1 OR FLATTER FORESLOPE SHALL BE PROVIDED IN ADVANCE OF ALL PORTABLE CONCRETE BARRIER SYSTEM WITHIN THE CLEAR ZONE. (REFER TO THE "ROADSIDE DESIGN GUIDE" - AASHTO, 1996, FOR CLEAR ZONE WIDTHS AND ADDITIONAL INFORMATION.)
5. WHEN PORTABLE CONCRETE BARRIER IS INSTALLED ON BOTH SIDES OF TRAFFIC, THE BEGINNINGS OF THE BARRIER SHALL BE STAGGERED BY AT LEAST 15 m.
6. OTHER BARRIER CONFIGURATIONS AND END CONNECTIONS ARE SUBJECT TO APPROVAL BY THE ENGINEER. BARRIERS OF DIFFERENT GEOMETRIC SHAPES SHALL NOT BE MIXED ON THE SAME RUN.
7. PLACE RETROREFLECTORIZED DRUMS OR BARRICADES IN ACCORDANCE WITH 6C-2 OF THE MUTCD IN ADVANCE OF PORTABLE CONCRETE BARRIER TO WARN AND ALERT DRIVERS.

MATERIAL NOTES

(1) BARRIERS SHALL BE LIGHT COLORED CLASS "AA" CONCRETE HAVING A MINIMUM 28 DAY COMPRESSION STRENGTH OF 30 MPa. BARRIERS SHALL HAVE A SMOOTH UNIFORM SURFACE FREE OF DEFECTS AND IRREGULARITIES. CASTING DATE SHALL BE SHOWN ON BARRIER. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 20 mm UNLESS OTHERWISE NOTED.

(2) ALL REINFORCING STEEL SHALL BE (ASTM-A615M-96a) GRADE 420. THE REINFORCEMENT SHOWN IS THE MINIMUM REQUIRED.

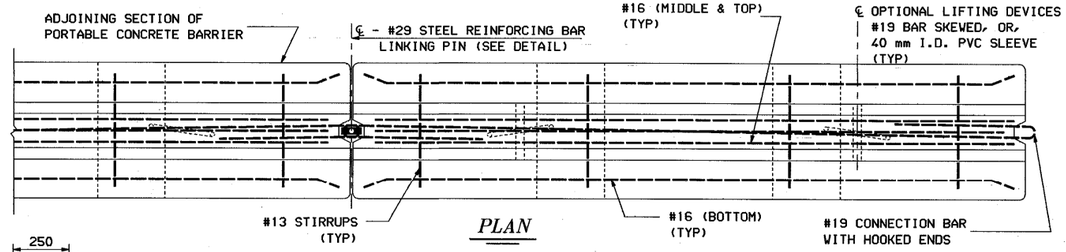
(3) EACH BARRIER UNIT SHALL INCLUDE ONE LINKING PIN, IF PIN AND LOOP CONNECTION SYSTEM IS USED (SEE DETAIL).

(4) LIFTING OPTIONS SHOWN ARE ADVISORY ONLY. IT SHALL BE THE CONTRACTORS' RESPONSIBILITY TO PROVIDE ADEQUATE LIFTING POINTS ON EACH BARRIER.

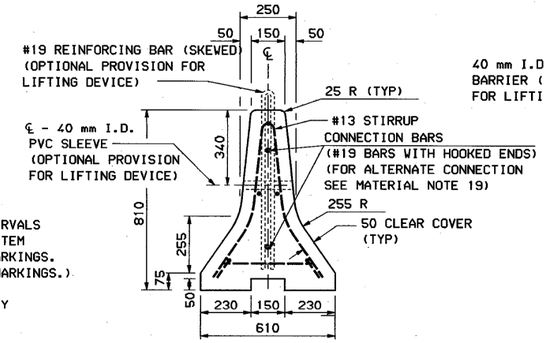
(5) CONNECTING DEVICES SHALL BE COMPATIBLE WITH OTHER UNITS AND SHALL ALLOW PLACEMENT ON A 33 m RADIUS. BARRIERS OF DIFFERING GEOMETRIC SHAPES SHALL NOT BE MIXED.

(6) J-J HOOK CONNECTION SYSTEM FROM EASI-SET INDUSTRIES MAY BE USED AS AN ALTERNATE CONNECTING SYSTEM BETWEEN BARRIER UNITS.

(7) DELINEATORS SHALL BE ATTACHED TO THE BARRIER USING AN APPROVED ADHESIVE MATERIAL OR BY BOLTS AND ANCHORS AS SHOWN ON STANDARD NO.12.

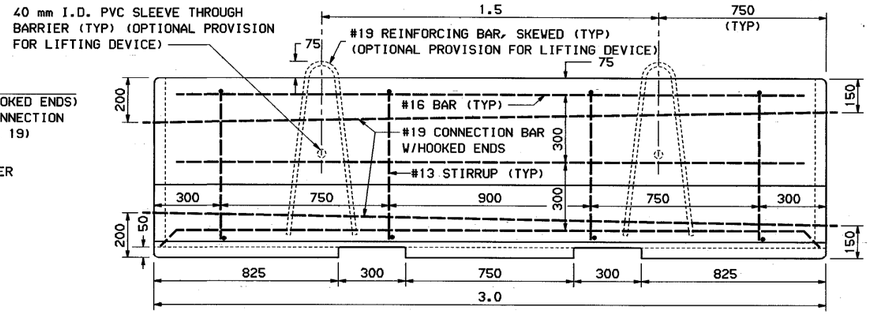


PLAN



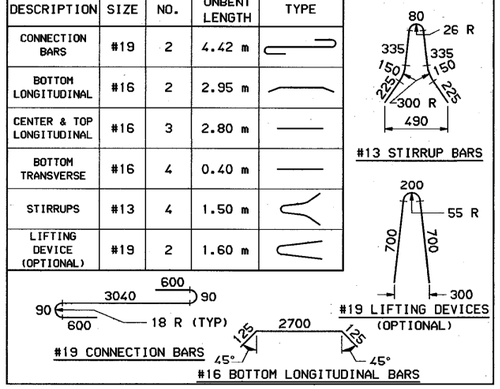
TYPICAL SECTION

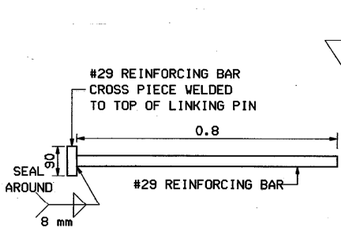
[*SGM11a*]



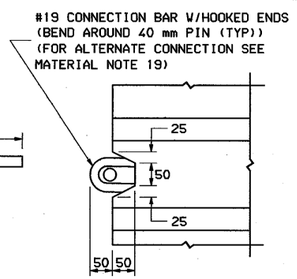
ELEVATION

PORTABLE CONCRETE BARRIER REINFORCING SCHEDULE				
DESCRIPTION	SIZE	NO.	UNBENT LENGTH	TYPE
CONNECTION BARS	#19	2	4.42 m	
BOTTOM LONGITUDINAL	#16	2	2.95 m	
CENTER & TOP LONGITUDINAL	#16	3	2.80 m	
BOTTOM TRANSVERSE	#16	4	0.40 m	
STIRRUPS	#13	4	1.50 m	
LIFTING DEVICE (OPTIONAL)	#19	2	1.60 m	





LINKING PIN



END NOTCH DETAIL

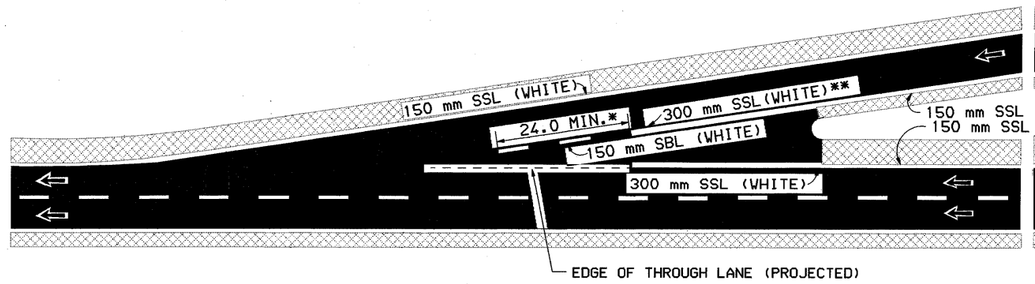
STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF HIGHWAY DESIGN

PORTABLE CONCRETE BARRIER

WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
	M-DETAIL	CM-5379(017)	12250	37	282

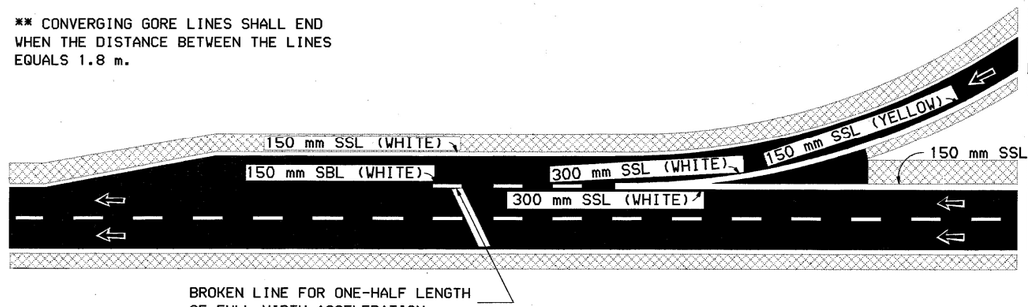
TYPICAL ENTRANCE RAMP MARKINGS



* BROKEN LINES ON ACCELERATION LANE SHALL NOT EXTEND BEYOND PROJECTED EDGE OF THROUGH LANE. THEY MAY BE OMITTED IF THE TAPER ANGLE OF THE ACCELERATION LANE DOES NOT ALLOW THE INSTALLATION OF 24 m OF BROKEN LINE.

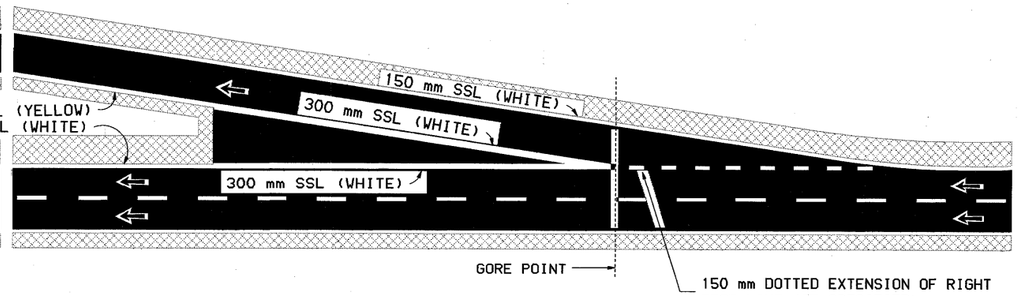
** CONVERGING GORE LINES SHALL END WHEN THE DISTANCE BETWEEN THE LINES EQUALS 1.8 m.

TAPERED ACCELERATION LANE

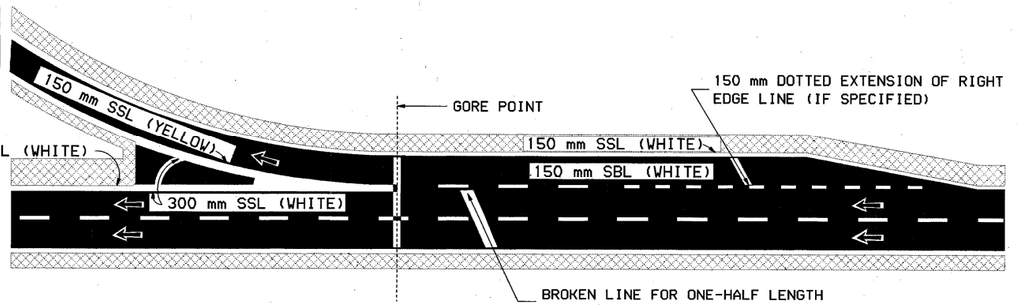


PARALLEL ACCELERATION LANE

TYPICAL EXIT RAMP MARKINGS

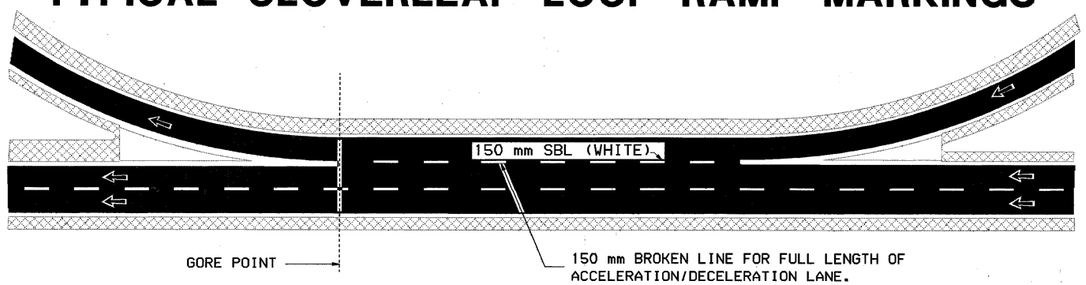


TAPERED DECELERATION LANE



PARALLEL DECELERATION LANE

TYPICAL CLOVERLEAF LOOP RAMP MARKINGS



LEGEND

SSL() = SINGLE SOLID LINE (COLOR)
DSL() = DOUBLE SOLID LINE (COLOR) (NOT SHOWN)
DL() = DOUBLE LINE - SOLID W/BROKEN (COLOR) (NOT SHOWN)
SBL() = SINGLE BROKEN LINE (COLOR)
DBL() = DOUBLE BROKEN LINE (COLOR) (NOT SHOWN)

GENERAL NOTES

1. ARROWS SHOWN ON THIS SHEET INDICATE DIRECTION OF TRAFFIC ONLY.
2. USE DOUBLE DELINEATORS FOR ACCELERATION AND DECELERATION LANES. SEE STANDARD NO. DL-2.
3. LAYOUT OF ALL GORE MARKINGS SHOULD BE REVIEWED BY THE BUREAU OF TRAFFIC PRIOR TO APPLICATION OF PAVEMENT MARKINGS.
4. ALL RAMPS WITH A MINIMUM ROADWAY WIDTH OF 6 m SHALL RECEIEVE BOTH WHITE EDGELINE AND YELLOW MEDIAN LINE WHETHER THE RAMP HAS RAISED CURBING OR NOT.
5. THE EDGE AND MEDIAN LINE MARKINGS FOR RAMPS WILL BE A MINIMUM OF 600 mm FROM THE CURB OR EDGE OF PAVEMENT.
6. THE MINIMUM OPENING BETWEEN THE LINES FOR RAMPS SHOULD BE 4.2 m. THE MEDIAN LINE ON A RAMP SHALL CONNECT WITH THE GORE MARKING. THE EDGE LINE SHALL CONNECT WITH THE MAINLINE EDGELINE TO PROVIDE A CONTINUOUS LINE.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS OR METERS. WHOLE NUMBERS INDICATE MILLIMETERS, DECIMAL NUMBERS INDICATE METERS UNLESS OTHERWISE NOTED.

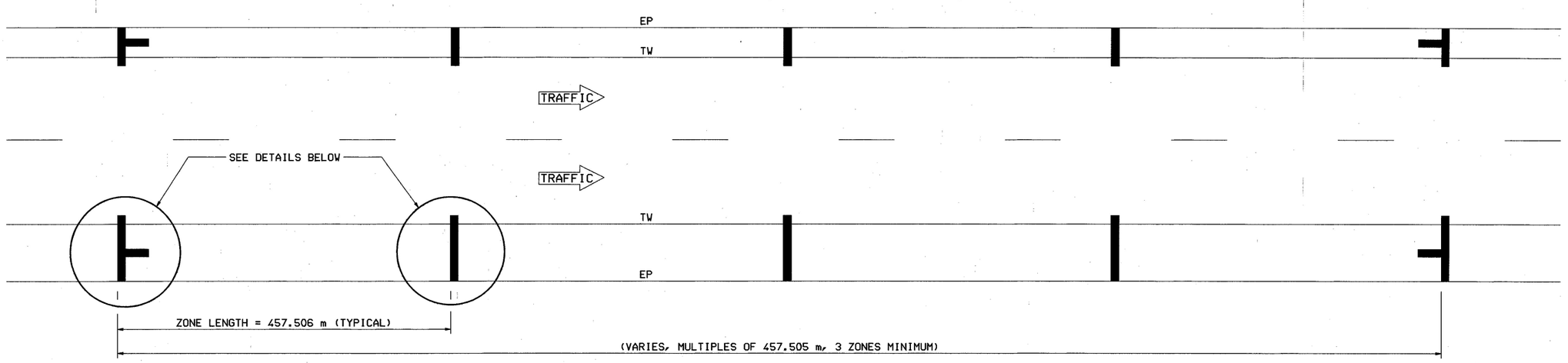
STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION ◦ BUREAU OF HIGHWAY DESIGN

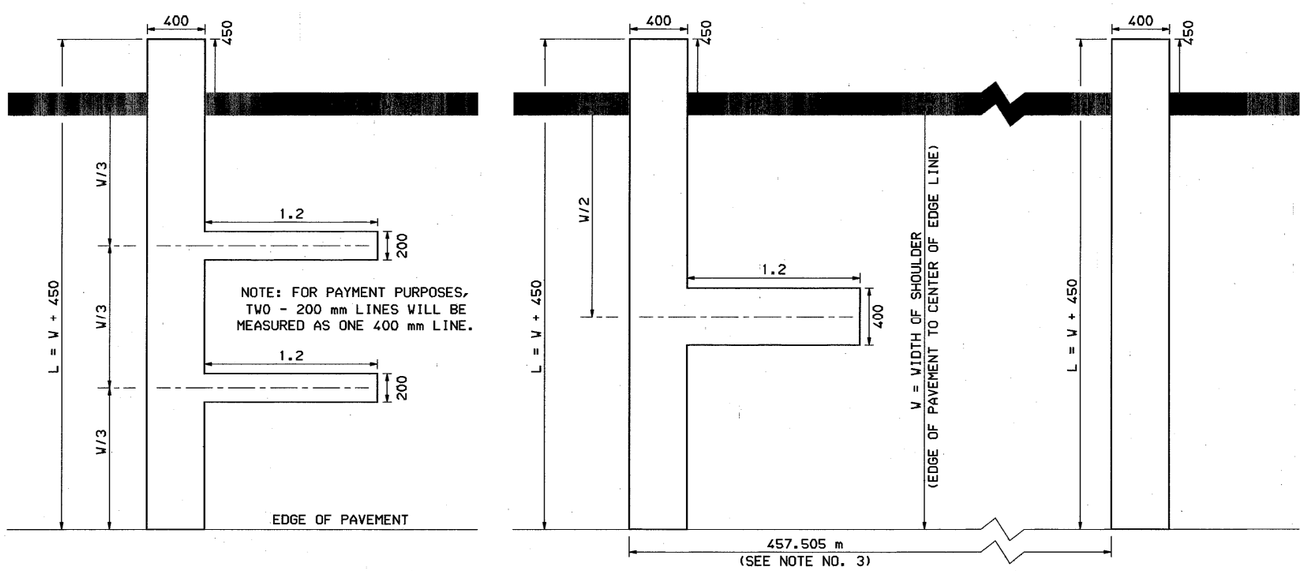
PAVEMENT MARKINGS AT ENTRANCE AND EXIT RAMPS

REVISION DATE	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
11-17-97	PM-6D	M-DETAIL	CM-5379(017)	12250	40	282

SPEED ZONE PAVEMENT MARKING - DIVIDED HIGHWAY



LAYOUT DETAILS



APPROACH END PATTERN - ALTERNATE
(DEPARTURE END OPPOSITE IN KIND)
(SEE NOTE NO. 2)

APPROACH END PATTERN - STANDARD
(DEPARTURE END OPPOSITE IN KIND)

INTERMEDIATE PATTERN

PAVEMENT MARKING DETAILS
RIGHT SHOULDER SHOWN - LEFT SHOULDER OPPOSITE IN KIND (SEE NOTE NO. 2)

GENERAL NOTES

1. ALL SPEED ZONE MARKINGS SHALL BE SOLID WHITE.
2. ALTERNATE APROACH END PATTERN SHALL BE USED FOR 3 ZONE LAYOUT ONLY. STANDARD PATTERN SHALL BE USED IN LIEU OF ALTERNATE PATTERN FOR LEFT SHOULDER WIDTHS LESS THAN 2.4 m.
3. LONGITUDINAL DISTANCES SHALL BE MEASURED BY SURVEY. A COPY OF SURVEY NOTES SHALL BE FORWARDED TO BUREAU OF TRAFFIC.
4. FOR LEGAL REASONS, STATE POLICE OPERATIONS SHALL BE PRESENT DURING THE INSTALLATION OF THESE MARKINGS. (TEL. 271-2287).
5. STATE POLICE SHOULD BE NOTIFIED WHEN ANY EXISTING MARKINGS ARE REMOVED DUE TO CONSTRUCTION.

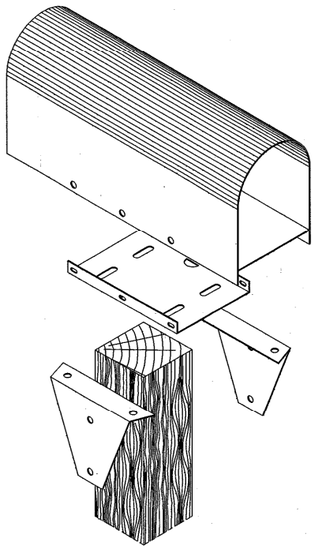
ALL DIMENSIONS SHOWN ARE IN MILLIMETERS OR METERS. WHOLE NUMBERS INDICATE MILLIMETERS, DECIMAL NUMBERS INDICATE METERS UNLESS OTHERWISE NOTED.

STATE OF NEW HAMPSHIRE

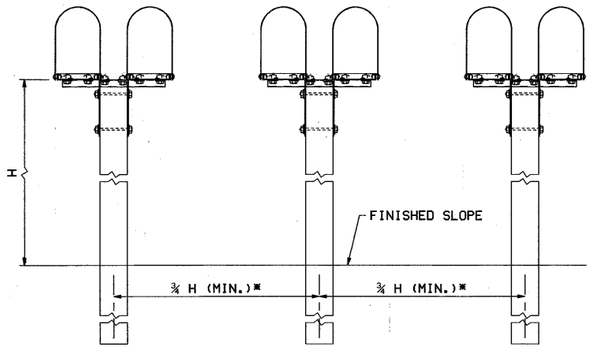
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

SPEED ZONE PAVEMENT MARKINGS (DIVIDED HIGHWAY)

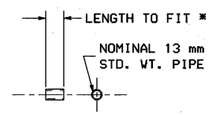
REVISION DATE	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
10-1-97	PM-5D	M-DETAIL	CM-5379(017)	12250	41	282



EXPLODED VIEW
(SEE NOTE NO. 2)

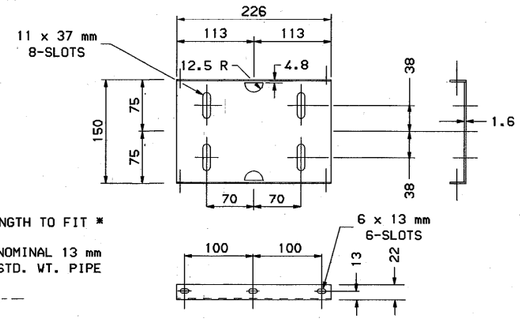


SPACING FOR MULTIPLE POST INSTALLATION
* FULL HEIGHT PREFERABLE

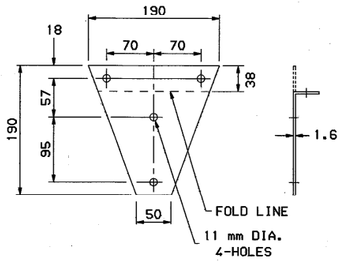


SPACER

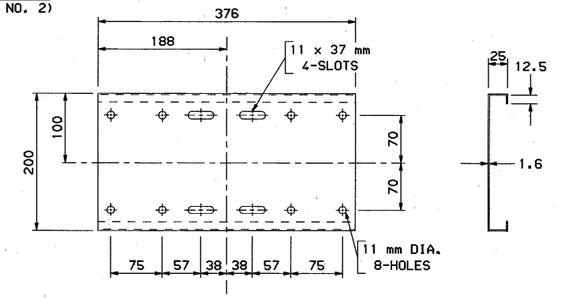
* STANDARD MAILBOX
WIDTHS ARE 165 mm,
203 mm, 292 mm



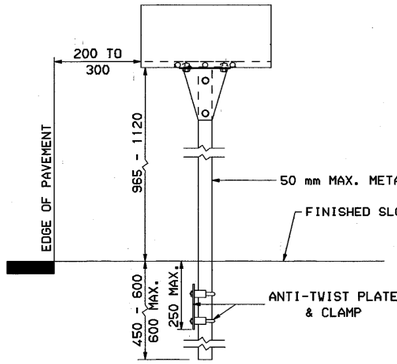
PLATFORM
(SEE NOTE NO. 2)



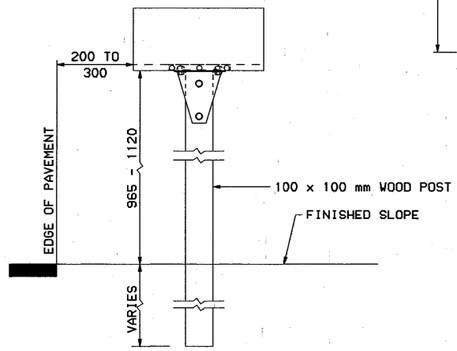
BRACKET
(SEE NOTE NO. 2)



SHELF
(SEE NOTE NO. 2)



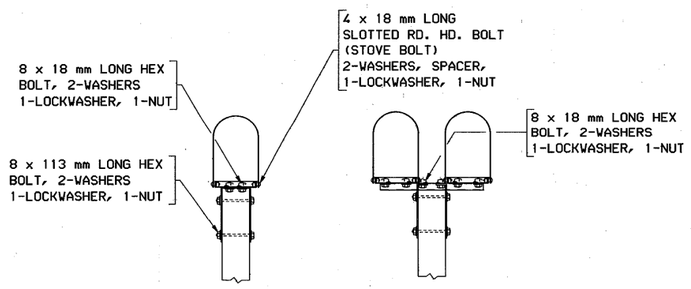
METAL POST



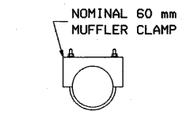
WOOD POST

GENERAL NOTES

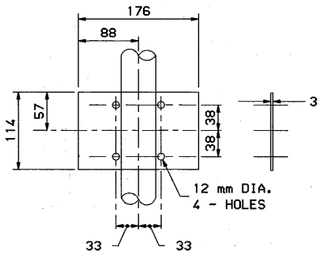
1. ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.
2. THE MAILBOX SUPPORT ASSEMBLY SHOWN ON THIS SHEET IS AN EXAMPLE OF AN ACCEPTABLE NON-PROPRIETARY DESIGN (SEE NOTE NO. 7).
3. MAILBOXES SHALL BE OF LIGHT SHEET METAL OR PLASTIC CONSTRUCTION CONFORMING TO THE REQUIREMENTS OF THE U.S. POSTAL SERVICE. NEWSPAPER DELIVERY BOXES SHALL BE OF LIGHT SHEET METAL OR PLASTIC CONSTRUCTION OF MINIMUM DIMENSIONS SUITABLE FOR HOLDING A NEWSPAPER. MAILBOXES AND NEWSPAPER DELIVERY BOXES ARE FURNISHED BY OTHERS.
4. NO MORE THAN TWO MAILBOXES MAY BE MOUNTED ON A SUPPORT STRUCTURE UNLESS THE SUPPORT STRUCTURE AND MAILBOX ARRANGEMENT HAVE BEEN SHOWN TO BE SAFE BY CRASH TESTING. HOWEVER, LIGHTWEIGHT NEWSPAPER BOXES MAY BE MOUNTED BELOW THE MAILBOX ON THE SIDE OF THE MAILBOX SUPPORT.
5. MAILBOX SUPPORTS SHALL NOT BE SET IN CONCRETE UNLESS THE SUPPORT DESIGN HAS BEEN SHOWN TO BE SAFE BY CRASH TESTS WHEN SO INSTALLED.
6. A SINGLE 100 x 100 mm SQUARE* OR 100 mm DIAMETER* WOOD POST OR A METAL POST WITH A STRENGTH NO GREATER THAN A 50 mm DIAMETER STANDARD STRENGTH STEEL PIPE AND EMBEDDED NO MORE THAN 600 mm INTO THE GROUND WILL BE ACCEPTABLE AS A MAILBOX SUPPORT. A METAL POST SHALL NOT BE FITTED WITH AN ANCHOR PLATE, BUT IT MAY HAVE AN ANTI-TWIST DEVICE THAT EXTENDS NO MORE THAN 250 mm BELOW THE GROUND SURFACE.
   * THESE DIMENSIONS ARE BOTH MAXIMUM AND MINIMUM
7. THE POST-TO-BOX ATTACHMENT DETAILS SHOULD BE OF SUFFICIENT STRENGTH TO PREVENT THE BOX FROM SEPARATING FROM THE POST TOP IF THE INSTALLATION IS STRUCK BY A VEHICLE. THE EXACT SUPPORT HARDWARE DIMENSIONS AND DESIGN MAY VARY SUCH AS THE SHELF AND BRACKET, OR ALTERNATIVE SLOT AND HOLE LOCATIONS. THE PRODUCT MUST RESULT IN A SATISFACTORY ATTACHMENT OF THE MAILBOX TO THE POST AND ALL COMPONENTS MUST FIT TOGETHER PROPERLY.
8. IN AREAS OF HIGH SNOWFALL, CANTILEVER DESIGNS MAY BE ADVANTAGEOUS. CANTILEVER SUPPORTS PERMIT WINDSHIELD CONTACT WITH THE MAILBOX WITHOUT THE VEHICLE FIRST CONTACTING THE POST, THEREFORE, AN APPROVED BREAKAWAY SUPPORT MUST BE USED.
9. FOR ADDITIONAL INFORMATION, REFER TO "A GUIDE FOR ERECTING MAILBOXES ON HIGHWAYS"-AASHTO, 1994.



ASSEMBLY HARDWARE



CLAMP
(FOR METAL POSTS ONLY)



ANTI-TWIST PLATE
(FOR METAL POSTS ONLY)

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

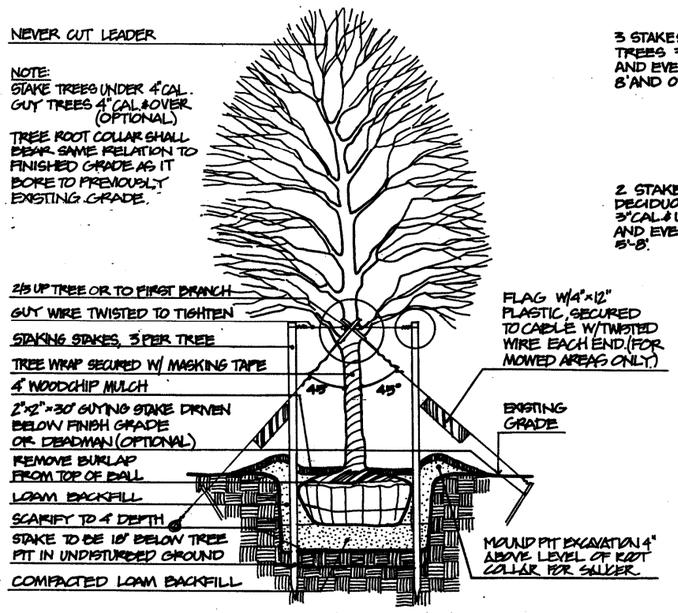
MAILBOX SUPPORT
ASSEMBLY DETAILS

WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
7-6-98	M-MBOXL	CM-5379(017)	12250	42	282

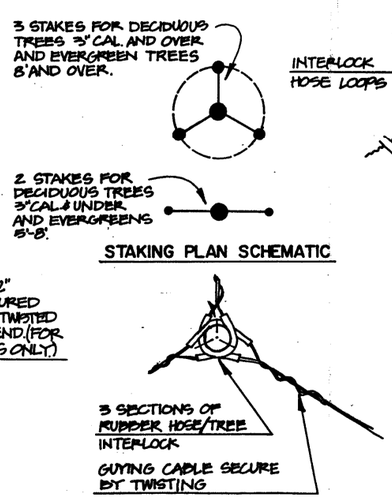
PLANTING DETAILS

Not To Scale

NHDOT
NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DESIGN
ROADSIDE DEVELOPMENT



TREE PLANTING

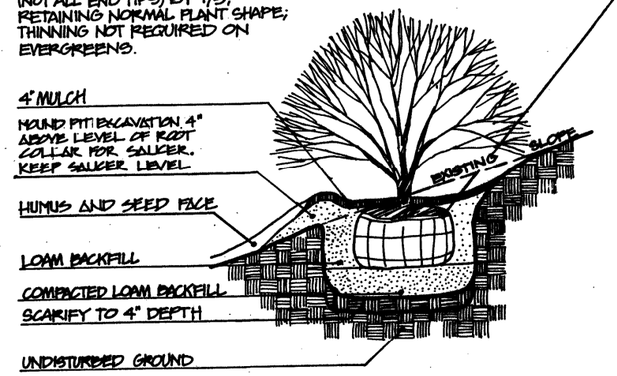


NOTE:
GUYING WIRE TO BE 3/16" DIA. CABLE, GALVANIZED

WIRE STAY FOR STAKED MATERIAL TO BE NO. 12 GAUGE, GALVANIZED

PLASTIC CHAINLOCK TIES PERMITTED ONLY WITH APPROVAL OF THE ENGINEER.

TREE STAKING AND GUYING

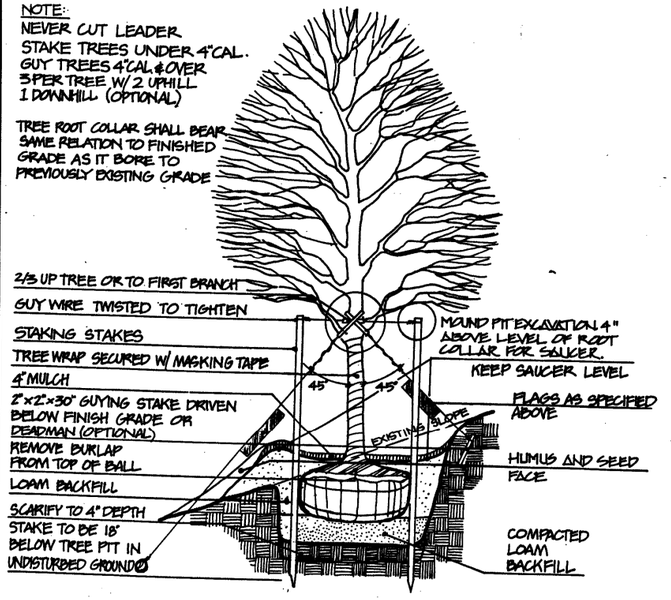


SHRUB PLANTING

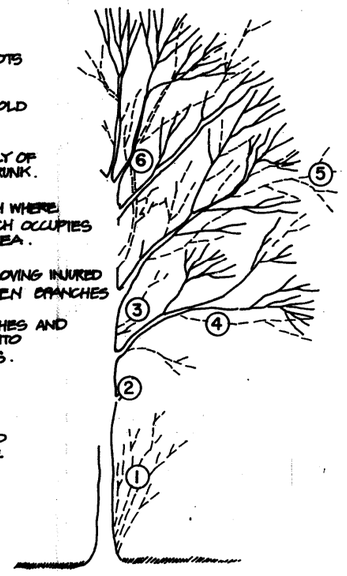
DECIDUOUS TREES	A	B	C
TO 2" CALIPER	12"	6"	12"
2" TO 3" CALIPER	12"	6"	12"
3" CALIPER & OVER	12"	6"	12"
EVERGREEN TREES			
TO 8'	12"	6"	12"
8' AND OVER	12"	6"	12"
SHRUBS	12"	6"	12"
VINES, GROUNDCOVER AND PLANTING BEDS	AS PER PLANS & SPECIFICATIONS		

PLANTING PIT SIZES

NOTE: GUYING TREES OPTIONAL FOR USE WITH 4" TREES, ONLY AT THE PROJECT ENGINEERS' DISCRETION.



TREE PLANTING ON SLOPE



① REMOVE SUCKER SHOOTS AT BASE OF TREE.

② MAKE CLEAN CUTS ON OLD STUBS, IF PRESENT

③ REMOVE ENTIRE SUPPLY OF TWIGS AND BUDS ON TRUNK.

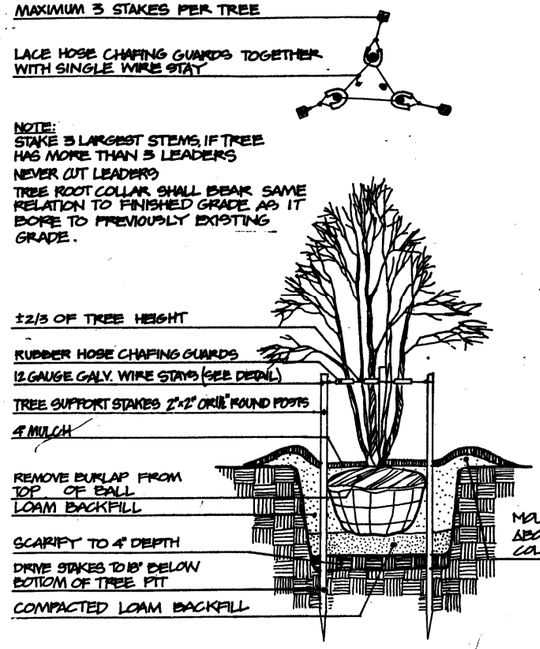
④ REMOVE LOWER BRANCH WHERE AN OVERLYING BRANCH OCCUPIES ABOUT THE SAME AREA.

⑤ SHAPE TREE BY REMOVING INJURED DEAD AND MISSHAPEN BRANCHES

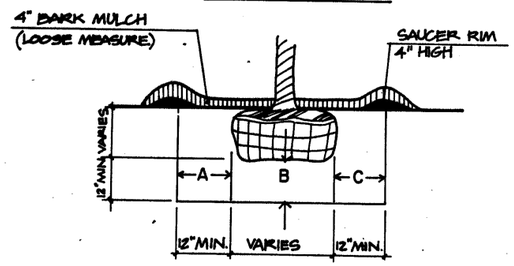
⑥ REMOVE CROSS BRANCHES AND THOSE DEVELOPING INTO SECONDARY LEADERS.

NOTE:
BRANCHES IN DOTTED LINES INDICATE THOSE TO BE REMOVED.

TREE PRUNING



MULTI-STEM TREE PLANTING



NOTE: • SAUCERS TO BE TAMPED
• NO PLASTIC BALL WRAP TO BE USED.

TYPICAL PLANTING PIT INFORMATION

FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
CM-5379(017)	12250	43	282

BRIDGING 44-242 75734

NOTEBOOKS — BOOK — PAGE

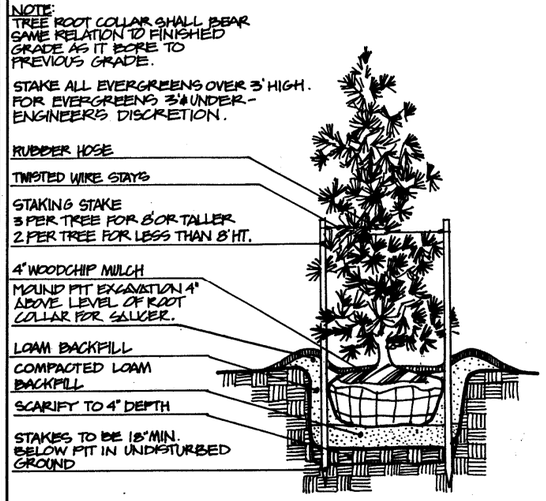
PROPOSED DESIGN — DATE
SHEET CHECKED — DATE
AS BUILT DETAILS — DATE

NUMBER — DATE — STATION — STATION — DESCRIPTION
REVISIONS AFTER PROPOSAL

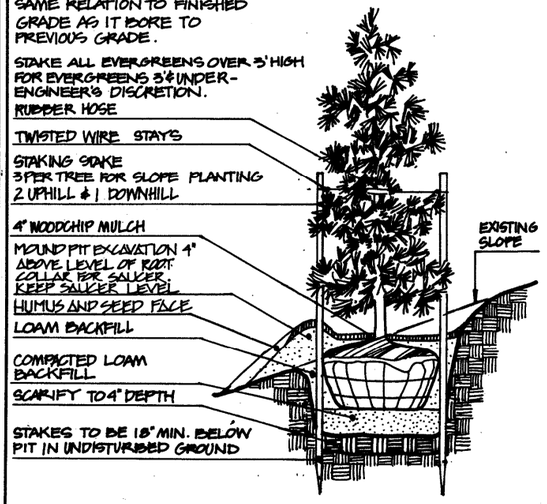
PLANTING DETAILS

Not To Scale

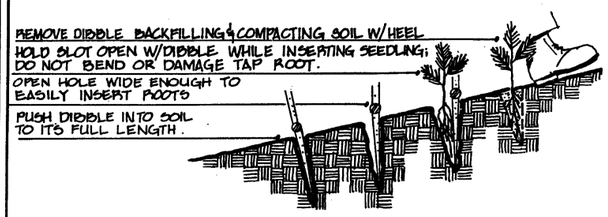
NHDOT
NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DESIGN
ROADSIDE DEVELOPMENT



EVERGREEN TREE PLANTING

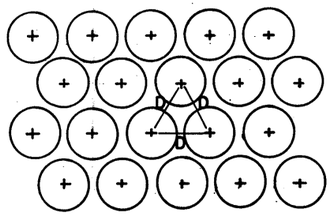


EVERGREEN TREE PLANTING ON SLOPE

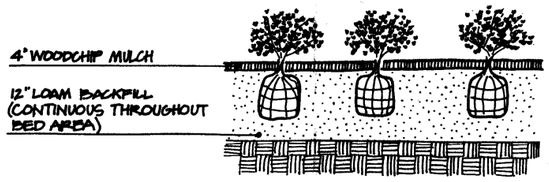


SEEDLINGS (EVERGREEN)

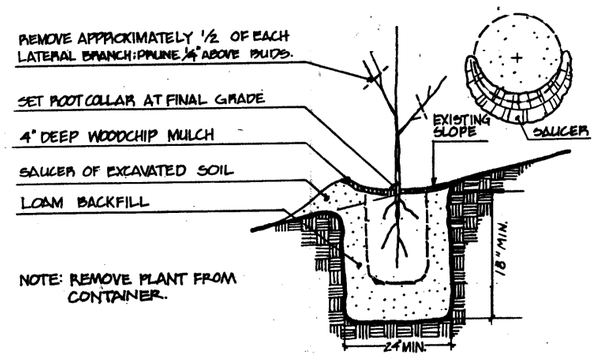
NOTE:
D = DIMENSION OF PLANT SPACING (SHRUB OR GROUND COVER AS INDICATED ON PLANS)



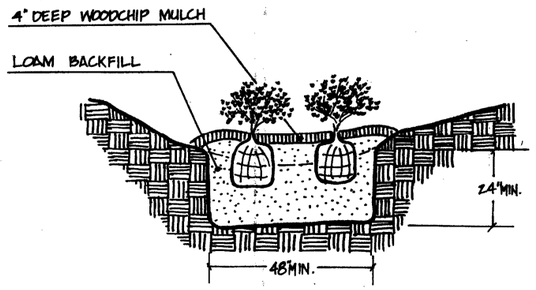
TYPICAL BED PLANT SPACING



GROUNDCOVER BED PLANTING



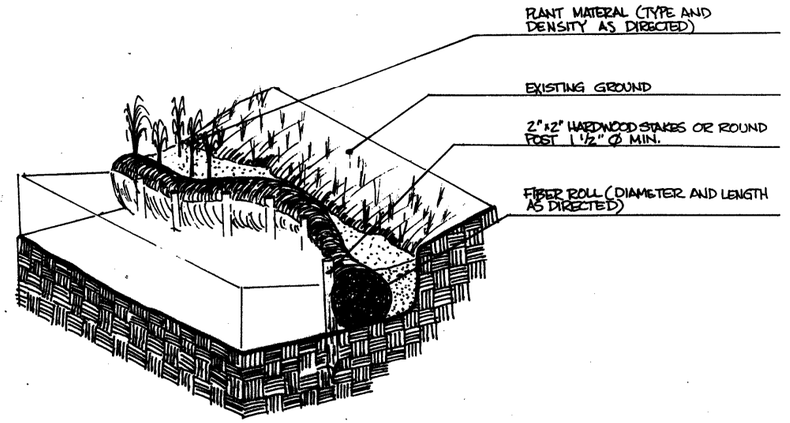
LINER PLANTING (DECIDUOUS)



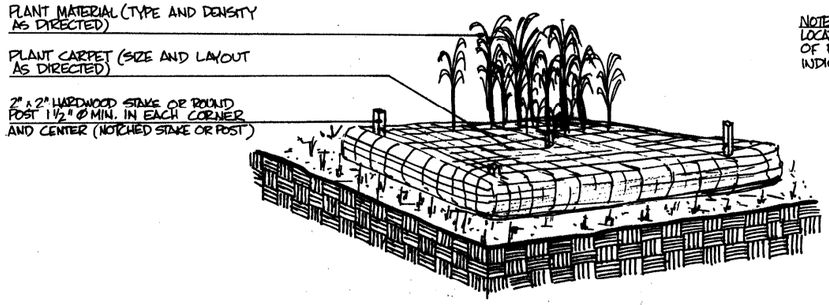
TRENCH NARROW MEDIAN PLANTING

SOIL MIX FOR LINERS OR SPECIAL USE

1 c.y. LOAM
2 c.y. PEAT
2 c.y. COW MANURE (WELL ROTTED)
200 lbs. LIMESTONE
150 lbs. FERTILIZER 10-6-4 (50% WIN)
5 GAL. OF THIS MIXTURE SHALL BE INCORPORATED INTO THE EXISTING SOIL AT EACH PLANT PIT

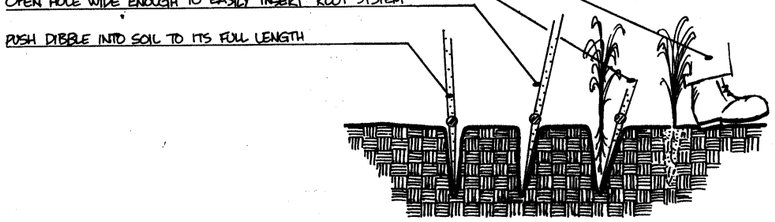


WETLAND FIBER ROLL PLACEMENT



NOTE:
LOCATION, DIMENSIONS AND LAYOUT OF PLANT CARPETS ARE AS INDICATED ON PLAN SHEETS.

WETLAND PLANT PALLET PLACEMENT



NOTE:
LOCATION, SIZE AND SPACING OF PLANT PLUGS ARE AS INDICATED ON PLAN SHEETS.

WETLAND PLANT PLUG PLACEMENT

REVISIONS AFTER PROPOSAL

DESCRIPTION	STATION	STATION	DATE
			NUMBER

NOTEBOOKS

BOOK	PAGE
BOOK	PAGE
BOOK	PAGE

	DATE
PROPOSED DESIGN	DATE
SHEET CHECKED	DATE
AS BUILT DETAILS	DATE

FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
CM-5379(017)	12250	44	282

BRUNING 44-242 75734

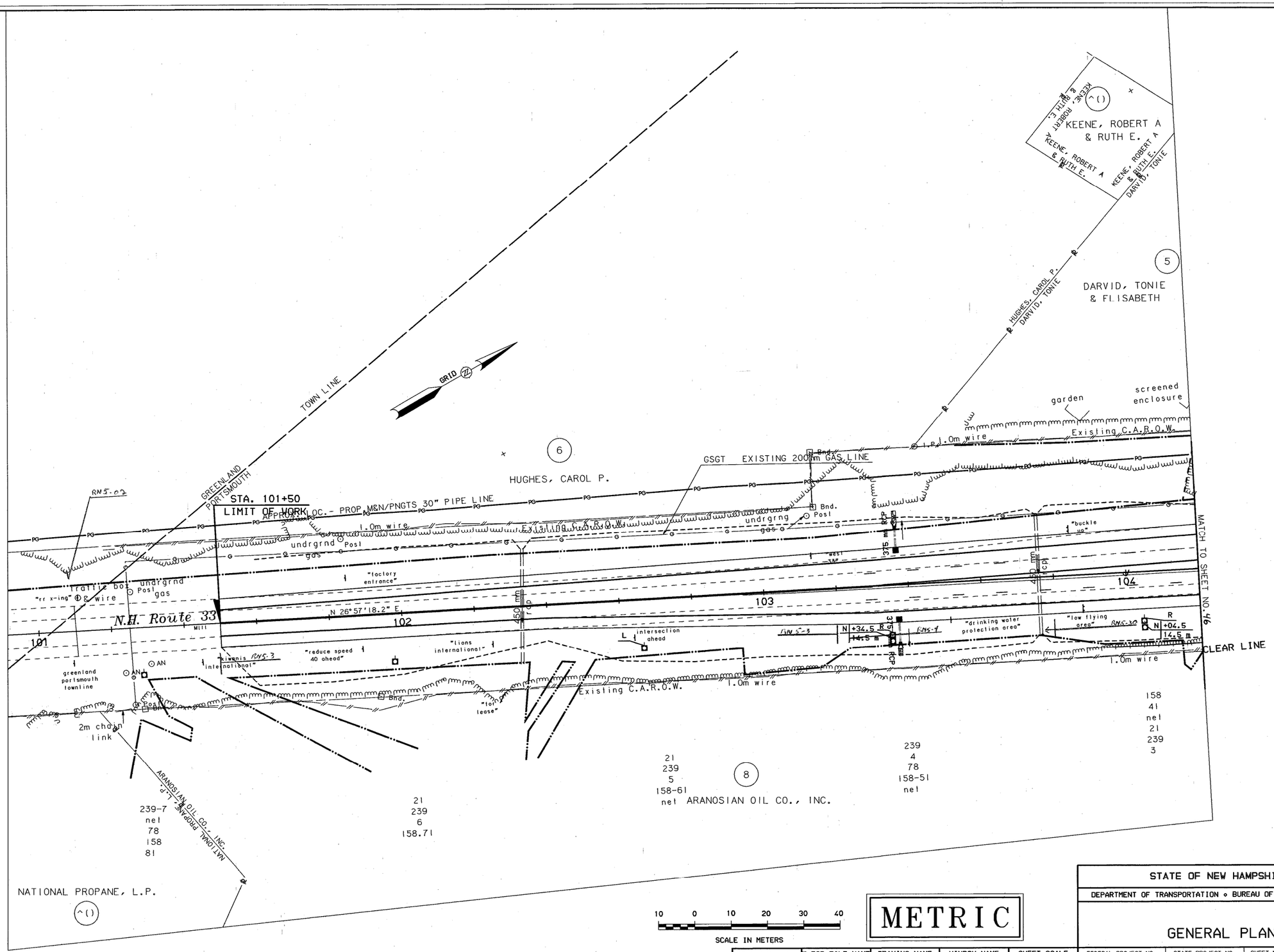
REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION

NOTEBOOKS

BOOK		PAGE
BOOK		PAGE
BOOK		PAGE

EXISTING DETAIL		DATE
PROPOSED DESIGN		DATE
SHEET CHECKED	J. KIROUAC, A. KING	DATE 8/98
CADD PLOT	E. RICHARDSON, J.HEBERT	DATE 8/98
AS BUILT DETAILS		DATE



10 0 10 20 30 40
SCALE IN METERS

METRIC

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

GENERAL PLANS

MULTIPLOT NAME	*.FGB FILE NAME	DRAWING NAME	WINDOW NAME	SHEET SCALE	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
	ASSEMBLER	SHEET01	GENSHOI	1:500	CM-5379(017)	12250	45	282

REVISIONS AFTER PROPOSAL

NUMBER	DATE	DESCRIPTION	STATION

NOTEBOOKS

BOOK		PAGE
BOOK		PAGE
BOOK		PAGE

EXISTING DETAIL		DATE
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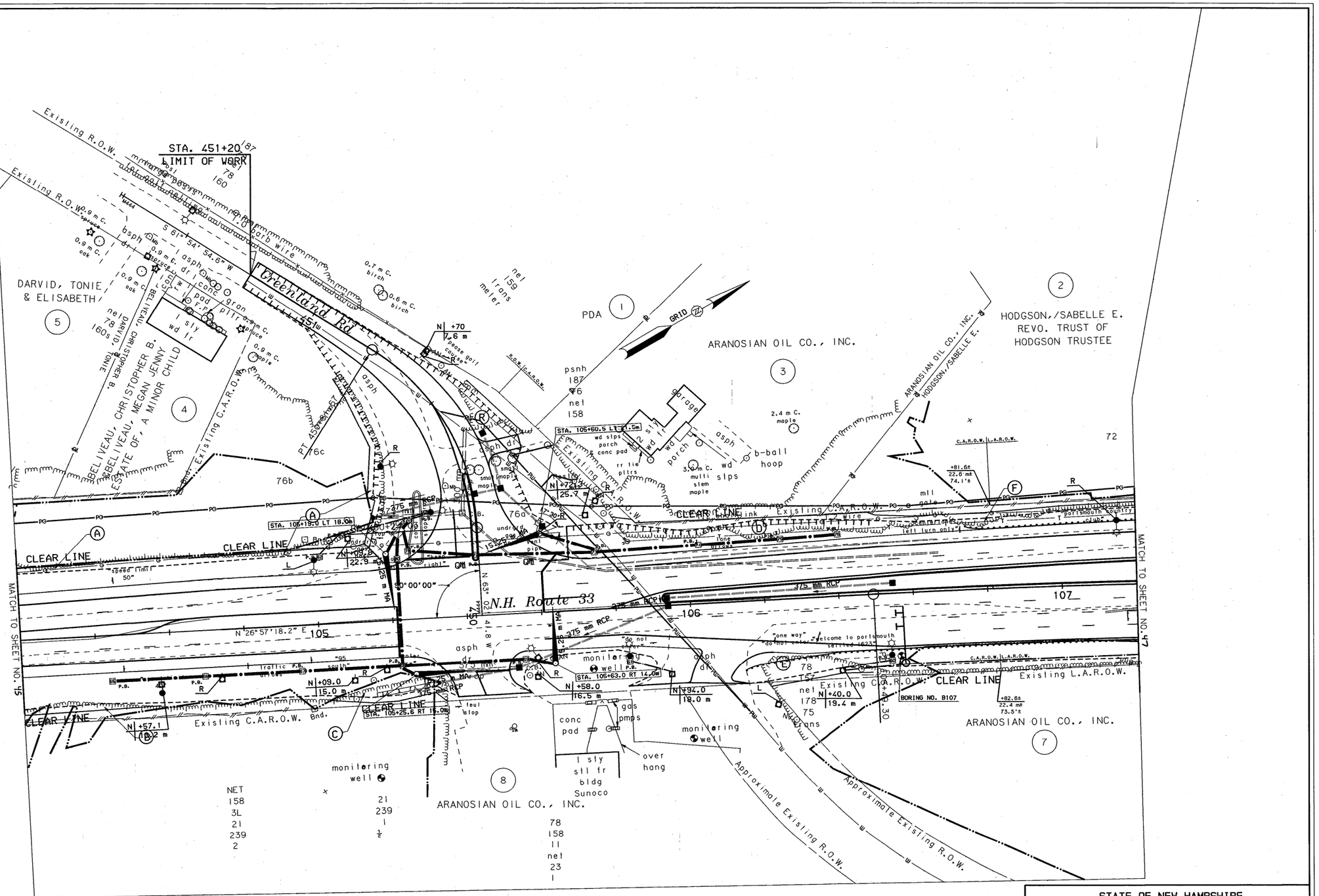
SHEET CHECKED	J. KIROUAC, A. KING	DATE 8/98
CADD PLOT	E. RICHARDSON, J. HEBERT	DATE 8/98
AS BUILT DETAILS		DATE



10 0 10 20 30 40

SCALE IN METERS

METRIC

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

GENERAL PLANS

MULTIPLOT NAME	*.FGB FILE NAME	DRAWING NAME	WINDOW NAME	SHEET SCALE	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
	ASSEMBLER	SHEET02	GENSH02	1:500	CM-5379(017)	12250	46	282

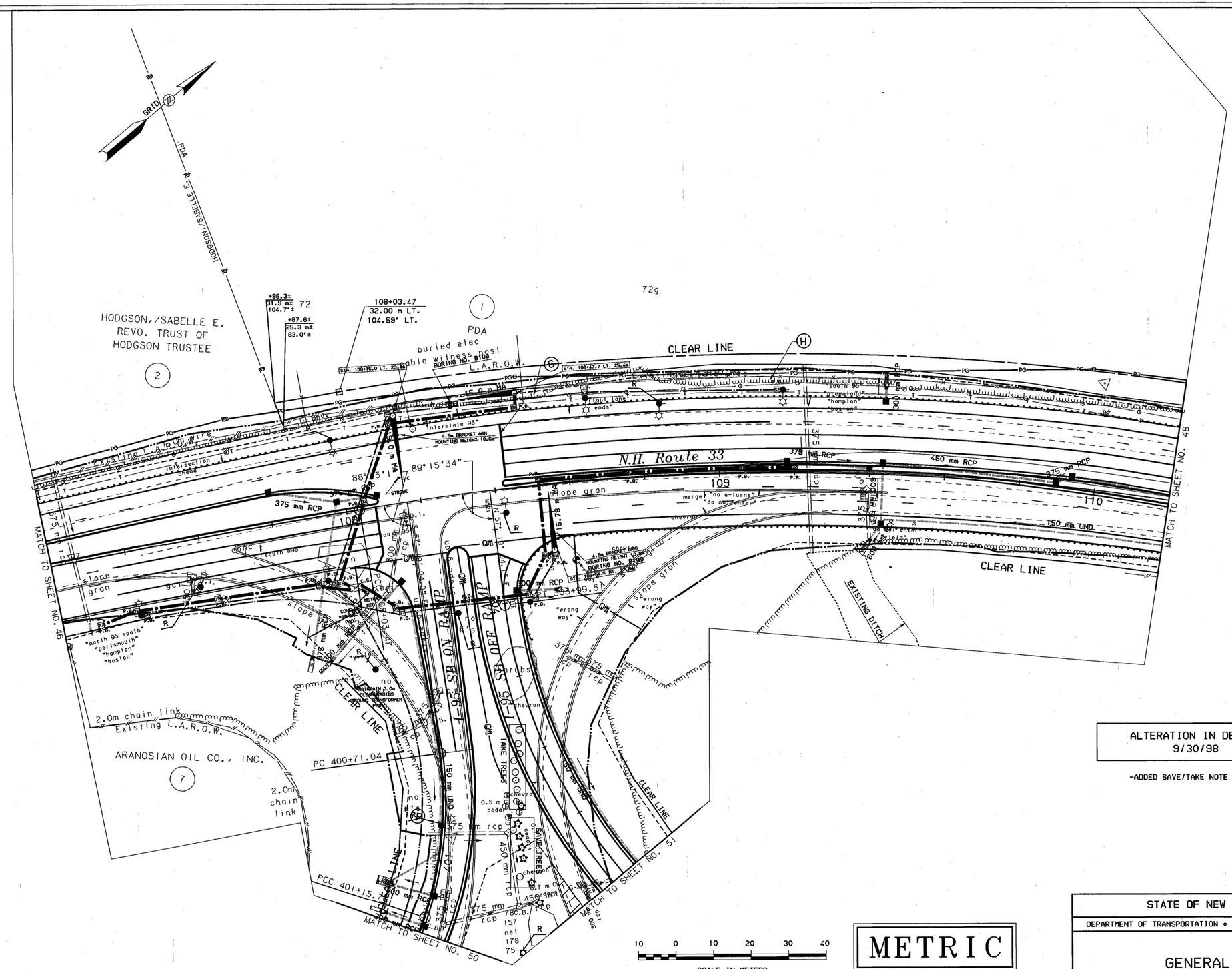
REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	DESCRIPTION

NOTEBOOKS

BOOK		PAGE
BOOK		PAGE
BOOK		PAGE

EXISTING DETAIL		DATE
PROPOSED DESIGN		DATE
SHEET CHECKED	J. KIROUAC, A. KING	DATE 8/98
CADD PLOT	E. RICHARDSON, J.HEBERT	DATE 8/98
AS BUILT DETAILS		DATE



ALTERATION IN DESIGN
9/30/98

-ADDED SAVE/TAKE NOTE TO TREES

10 0 10 20 30 40
SCALE IN METERS

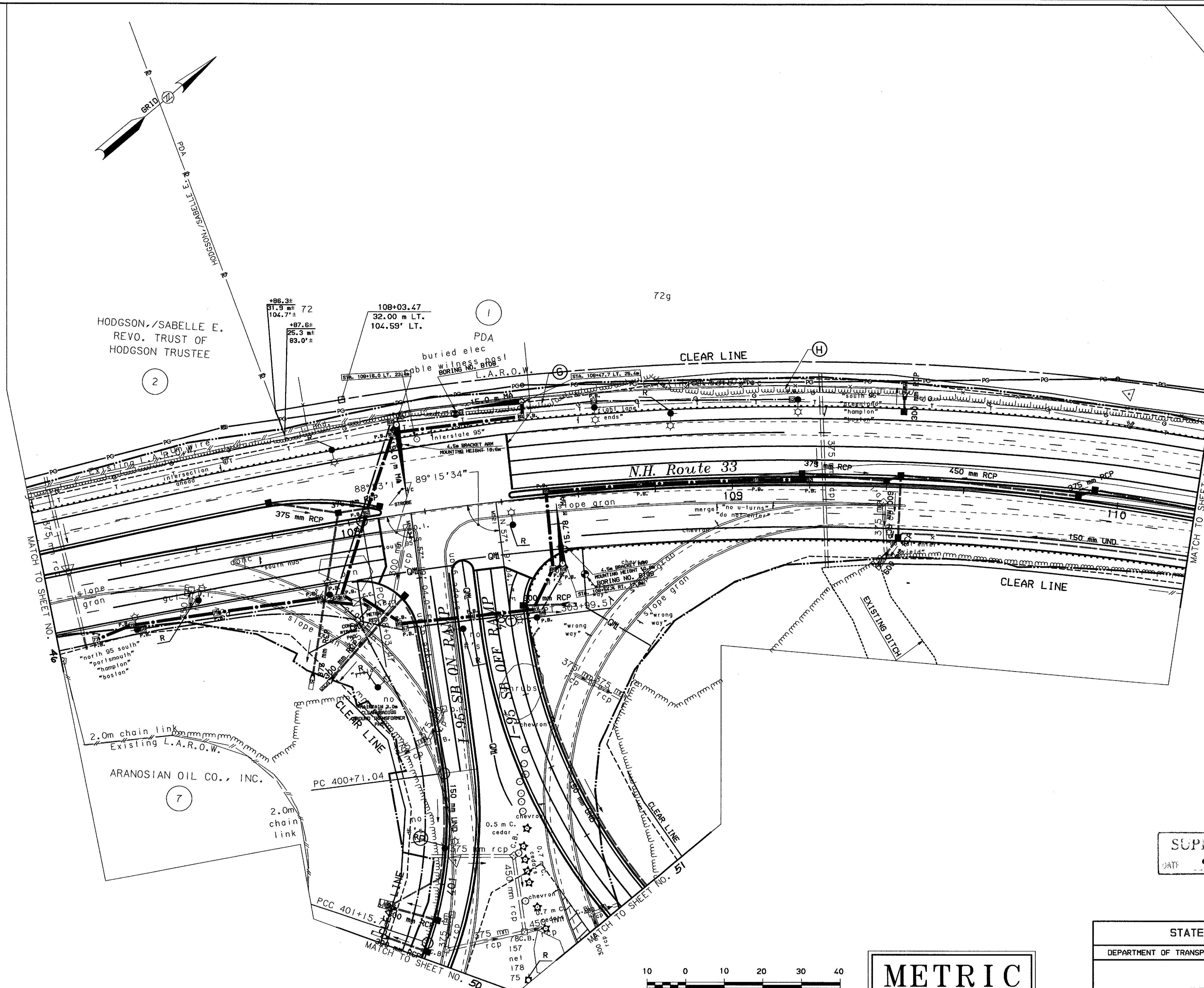
METRIC

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

GENERAL PLANS

MULTIPLOT NAME	*.FGB FILE NAME	DRAWING NAME	WINDOW NAME	SHEET SCALE
	ASSEMBLER	SHEET03	GENSH03	1:500

FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
CM-5379(017)	12250	47	282



10 0 10 20 30 40

SCALE IN METERS

METRIC

SUPERSEDED
DATE 9-30-98

REVISIONS AFTER PROPOSAL				
NUMBER	DATE	STATION	STATION	DESCRIPTION

NOTEBOOKS	
BOOK	PAGE
BOOK	PAGE
BOOK	PAGE

EXISTING DETAIL		DATE
PROPOSED DESIGN		DATE
SHEET CHECKED	J. KIROUAC, A. KING	DATE 8/98
CADD PLOT	E. RICHARDSON, J.HEBERT	DATE 8/98
AS BUILT DETAILS		DATE

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

GENERAL PLANS

MULTIPLOT NAME	*.FGB FILE NAME	DRAWING NAME	WINDOW NAME	SHEET SCALE	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
	ASSEMBLER	SHEET03	GENSH03	1:500	CM-5379(017)	12250	47 A	282

REVISIONS AFTER PROPOSAL

NUMBER	DESCRIPTION	STATION	DATE

NOTEBOOKS		
BOOK		PAGE
BOOK		PAGE
BOOK		PAGE

	DATE
EXISTING DETAIL	
PROPOSED DESIGN	
SHEET CHECKED J. KIROUAC, A. KING	8/98
CADD PLOT E. RICHARDSON, J.HEBERT	8/98
AS BUILT DETAILS	

MATCH TO SHEET NO. 55

PDA

GRID

SOUTH ACCESS ROAD

N20° 04' 65.9" W

0.3 m C. pine

ROW

Gravel access rd

701+08.66
25.00 m LT.
82.02' LT.

701+08.66
15.00 m RT.
49.21' RT.

PT 701+08.66

BORING NO. B123

1.2m barb wire

700+93.37
15.02 m RT.
49.28' RT.

700+82.00
25.00 m LT.
82.02' LT.

1.8 chain link

Existing L.A.R.O.W.

111+70.00
32.00 m LT.
104.99' LT.

no #'s

APPROX. LOC.- PROP. M&N/PNGTS 30" PIPE LINE

L.A.R.O.W.

CLEAR LINE

BORING NO. B111

1.0m barb wire

Speed limit 40

Interstate 93 Exit 3 ahead

UNDERGROUND TELEPHONE CONDUIT LINE AS FOUND IN FIELD

BORING NO. B114

BORING NO. B115

NEW PUSH BRACE POLE

SB OFF RAMP (EXIT 3A)

N.H. Route 33

375 mm RCP

600 mm RCP

150 mm UND

Do not enter

MATCH TO SHEET NO. 52

MATCH TO SHEET NO. 47

MATCH TO SHEET NO. 51

1m high stockwire

BORING NO. B112

m.b.i.

0.5 m C. cedar

0.5 m C. elm

loading lights lower

SCALE IN METERS

10 0 10 20 30 40

METRIC

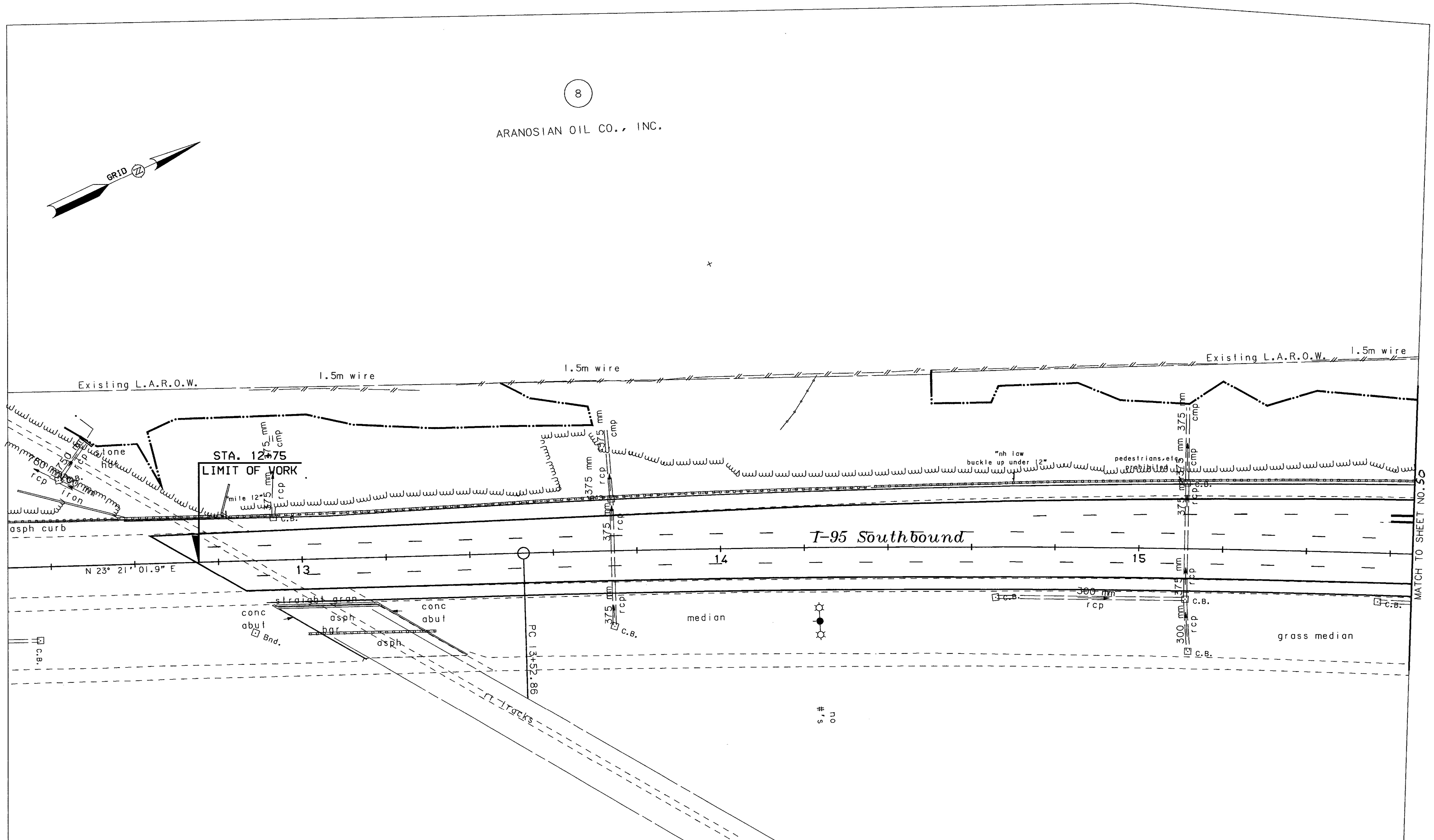
REVISED
Date APR 16 1999

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

GENERAL PLANS

MULTIPLOT NAME	*.FGB FILE NAME	DRAWING NAME	WINDOW NAME	SHEET SCALE	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
	ASSEMBLER	SHEET04	GENSH04	1:500	CM-5379(017)	12250	48	282



SCALE IN METERS

10 0 10 20 30 40

METRIC

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

GENERAL PLANS

MULTIPLOT NAME	*.FGB FILE NAME	DRAWING NAME	WINDOW NAME	SHEET SCALE	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
	ASSEMBLER	SHEET05	GENSH05	1:500	CM-5379(017)	12250	49	282

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION

NOTEBOOKS

BOOK		PAGE
BOOK		PAGE
BOOK		PAGE

EXISTING DETAIL		DATE
PROPOSED DESIGN	J. KIROUAC, A. KING	DATE 8/98
SHEET CHECKED	E. RICHARDSON, J.HEBERT	DATE 8/98
CADD PLOT		DATE
AS BUILT DETAILS		DATE

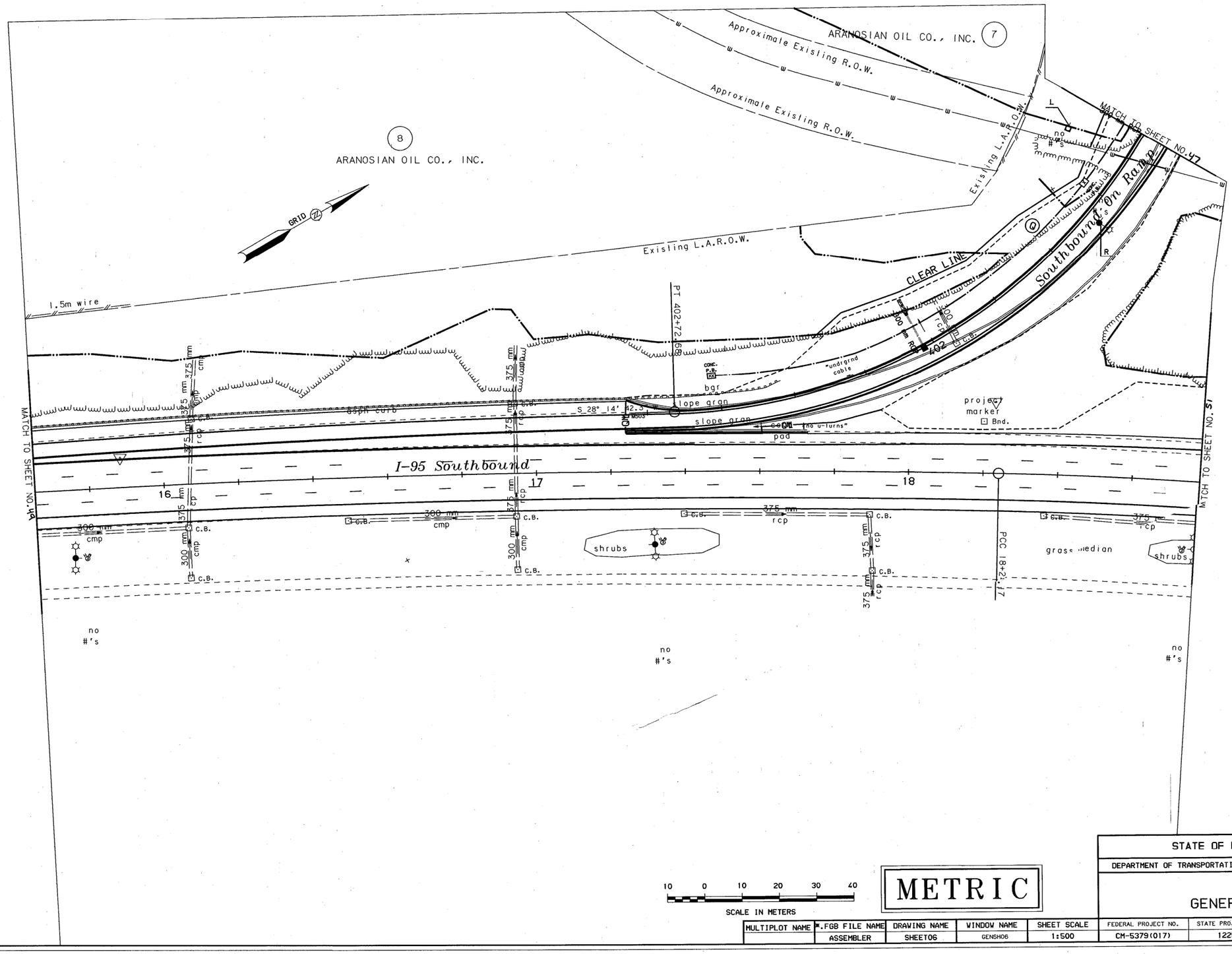
REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION

NOTEBOOKS

BOOK		PAGE
BOOK		PAGE
BOOK		PAGE

EXISTING DETAIL	DATE	
PROPOSED DESIGN	DATE	
SHEET CHECKED	J. KIROUAC, A. KING DATE	8/98
CADD PLOT	E. RICHARDSON, J.HEBERT DATE	8/98
AS BUILT DETAILS	DATE	



10 0 10 20 30 40

SCALE IN METERS

METRIC

MULTIPLOT NAME	*.FGB FILE NAME	DRAWING NAME	WINDOW NAME	SHEET SCALE
	ASSEMBLER	SHEET06	GENSH06	1:500

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION ◦ BUREAU OF HIGHWAY DESIGN

GENERAL PLANS

FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
CM-5379(017)	12250	50	282

MITIGATION CONSTRUCTION LINE
45.0m OFFSET FROM SB OFF RAMP
(EXIT 3B) ALIGNMENT

MATCH TO SHEET NO. 47

MATCH TO SHEET NO. 48

MATCH TO SHEET NO. 50

MATCH TO SHEET NO. 52

EXISTING DITCH

CLEAR LINE

REMOVE PAVEMENT
GRADE TO DRAIN
CONST. LOAM, SEED
& RELATED ITEMS

MITIGATION AREA
CONSTRUCTION LINE

DITCH AREA

BORING NO. B104

Southbound Off Ramp (Exit 3B)

I-95 Southbound

grass median

shrubs

broken asphalt

gravel & logs

slope gran

conc pad

barbed wire

underground cable

GRID N

SCALE IN METERS
10 0 10 20 30 40

METRIC

REVISED
Date APR 16 1999

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

GENERAL PLANS

MULTIPLOT NAME	*.FGB FILE NAME	DRAWING NAME	WINDOW NAME	SHEET SCALE	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
	ASSEMBLER	SHEET07	GENSH07	1:500	CM-5379(017)	12250	51	282

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION

NOTEBOOKS

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	BOOK		PAGE
	BOOK		PAGE

	DATE	
EXISTING DETAIL		
PROPOSED DESIGN	DATE	
SHEET CHECKED	J. KIROUAC, A. KING	DATE 8/98
CADD PLOT	E. RICHARDSON, J.HEBERT	DATE 8/98
AS BUILT DETAILS		DATE

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION

NOTEBOOKS		
	BOOK	PAGE
	BOOK	PAGE
	BOOK	PAGE

	DATE
EXISTING DETAIL	
PROPOSED DESIGN	DATE
SHEET CHECKED J. KIROUAC, A. KING	DATE 8/98
CADD PLOT E. RICHARDSON, J. HEBERT	DATE 8/98
AS BUILT DETAILS	DATE

I-95 SB OFF RAMP (EXIT 3A)

PT 503+07.43

MATCH TO SHEET NO. 48

503+07.43
9.00 m RT.
29.53° RT.

450 mm RCP

80

300 mm cp

N +80.30
33.7

BORING NO. B116

CLEAR LINE

I-95 SB OFF RAMP

N +25.1
17.3

S 51° 18' 14.6" W

MITIGATION AREA
CONSTRUCTION LINE

Landing Lights Tower

CLEAR LINE

no #'s

300 mm RCP

150 mm UND

04c CLEAR LINE

BORING NO. B117

PT 513+99.1

STA. 114+28
LIMIT OF WORK

N.H. Route 3B

(Exit 3B)

MATCH TO SHEET NO. 51

MATCH TO SHEET NO. 53

N 48° 07' 27.2" E

I-95 Southbound

22 23 24

375 mm rcp

flowers

ST 2J +93.33

6b

51

375 mm cmp

shrubs

sign base conc pad

grass median

bridge columns

rip rap

Box Beam rail

slr gran c/b

beam rail

slr gran c/b

conc curb

no #'s

GRID N

SCALE IN METERS
10 0 10 20 30 40

METRIC

REVISED
Date APR 16 1999

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

GENERAL PLANS

MULTIPLOT NAME	*.FGB FILE NAME	DRAWING NAME	WINDOW NAME	SHEET SCALE	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
	ASSEMBLER	SHEET08	GENSH08	1:500	CM-5379(017)	12250	52	282

REVISIONS AFTER PROPOSAL

NUMBER	DESCRIPTION	STATION	STATION	DATE

NOTEBOOKS

BOOK		PAGE
BOOK		PAGE
BOOK		PAGE

		DATE
EXISTING DETAIL		
PROPOSED DESIGN		DATE
SHEET CHECKED	J. KIROUAC, A. KING	DATE 8/98
CADD PLOT	E. RICHARDSON, J. HEBERT	DATE 8/98
AS BUILT DETAILS		DATE

I-95 SB OFF RAMP

352+89.80

L.A.R.O.W.

cemetery

0.5 m c.

300 mm cmp

rcp

150 mm cmp

BORING NO. B120

CLEAR LINE

arrow

0.4 m c. oak

0.5 m c.

5.5m hedge

right lane ends

"exit 26"

slope grass

150 mm UND

375 mm rcp

MATCH TO SHEET NO. 52

500+33.52
9.00 m RT.
29.53' RT.

500+33.52
15.00-m RT.
49.21' RT.

CLEAR LINE

500+33.52

L.A.R.O.W.

SHADING REPRESENTS AREA OF CLEARING AND GRUBBING BEYOND CLEARING LINE

0.5 m c.
269.36+90
36.41 m RT.
116.17' RT.

slope grass

150 mm cmp

I-95 Southbound

N 48° 07' 27.2" E

25 26 27

M.H.

C.B.

shrubs

grass median

STA. 27+20
LIMIT OF WORK

conc abuts
stone face
(typ.)

rip rap

bgt

plaque abuts conc

49c/Maple

0.2 m c. maple

undrgnd cable

N.H. RTE 33

"33 85"
"Navy Blue/White"
marine

no #'s

GRID N

Existing L.A.R.O.W.

STATE OF N.H.

HARTZELL, DAVID E. & DEBRA LATSHAUGH

HARTZELL, DAVID E.

HARTZELL-MILDRED T.

MARTEL, MILDRED T.

SINK, THEODORE W. JR

2.0m chain link

METRIC

SCALE IN METERS

MULTIPLOT NAME	*.FGB FILE NAME	DRAWING NAME	WINDOW NAME	SHEET SCALE
	ASSEMBLER	SHEET09	GENSH09	1:500

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

GENERAL PLANS

FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
CM-5379(017)	12250	53	282

MATCH TO SHEET NO. 55

MATCH TO SHEET NO. 56

PC 63+30.61

63+30.61
9.00 m LT.
29.53' LT.

PC 353+02.39

Perimeter Road

Loop Road

121.52m (400 ft.) WELL PROTECTION AREA RADIUS

Edge of cleared right turned R=122.7m

PDA

Existing L.A.R.O.W.

R.O.W.

PT 65+28.17

65+28.17
9.00 m LT.
29.53' LT.

66+00.00
32.22 m LT.
105.71' LT.

CLEAR LINE

STA. 65+52.10
END CM-5379(017)
(ROW PROJECT)

BORING NO. B123

LIMIT OF SALT-TOLERANT GRASS SEED (TYPICAL)

BOTTOM OF SWALE

750 mm RCP

300 mm rcp

PT 354+11.98

PC 350+23.98

PT 350+63.02

CONSTRUCT CONCRETE PAD
FOR MOTORCYCLE PARKING
ITEM 608.220 200mm CONCRETE SIDEWALK

STA. 82+80
LIMIT OF WORK

N 57° 58' 49.4" E

LIMIT OF ITEM 660.75 BUILDING

PC 352+24.34

PT 352+41.63

PC 351+87.93

PT 351+23.31

CONDUIT RUN TO RADIO, FIRE ALARM BOX, ANTENNA AND SECURITY CAMERA

ITEM 201.711 - SELECTIVE CLEARING (SEE LANDSCAPING PLANS)

SAVE HORNBEAM CLUMP - HT. 5.5 m

POWER REMOVE POLE ITEM 201.22

SHADING REPRESENTS AREA OF CLEARING AND GRUBBING BEYOND CLEARING LINE

PC 352+89.87

PC 352+31.44

PC 351+90.52

MIRASOLA, JOHN J.
& MARY C.

0.5 m C. elm

0.7 m C. pine

0.6 m C. pine

0.8 m C. pine

0.9 m C. pine

0.5 m C. poplar

gas line witness post

10 0 10 20 30 40

SCALE IN METERS

METRIC

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

GENERAL PLANS

MULTIPLOT NAME	*.FGB FILE NAME	DRAWING NAME	WINDOW NAME	SHEET SCALE	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
	ASSEMBLER	SHEET10	GENSH10	1:500	CM-5379(017)	12250	54	282

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	DESCRIPTION

NOTEBOOKS

BOOK		PAGE
BOOK		PAGE
BOOK		PAGE

EXISTING DETAIL		DATE	
PROPOSED DESIGN		DATE	
SHEET CHECKED	J. KIROUAC, A. KING	DATE	8/98
CADD PLOT	E. RICHARDSON, J. HEBERT	DATE	8/98
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

NUMBER	DESCRIPTION	STATION	STATION	DATE

NOTEBOOKS

BOOK		PAGE	
BOOK		PAGE	
BOOK		PAGE	

EXISTING DETAIL	DATE	
PROPOSED DESIGN	DATE	
SHEET CHECKED	J. KIRDUAC, A. KING	DATE 8/98
CADD PLOT	E. RICHARDSON, J. HEBERT	DATE 8/98
AS BUILT DETAILS		DATE

wd posts for runway lights (typ.)
wd posts for runway lights (typ.)
Post AN
gravel
gravel access rd
2.5m chain link
Post
60+80.00
60.00 m RT.
196.85' RT.
STA. 60+80
LIMIT OF WORK
ROW
60+80.00
5.00 m LT.
16.40' LT.
"no pedestrians or cyclists beyond this point"
broken asph
asphalt access rd
2.5m chain link
450 cmp
STA. 61+71.54
BEGIN CM-5379(017)
(ROW PROJECT)
PDA
703+00.00
25.00 m LT.
82.02' LT.
ROW
monitering well
703+89.51
15.00 m LT.
49.21' LT.
REMOVE PAVEMENT
GRADE TO DRAIN
CONST. LOAM, SEED
& RELATED ITEMS
MATCH TO SHEET NO. 48
702
N20° 04' 65.9" W
SOUTH ACCESS ROAD
703
704
61° 19' 26"
R.O.W.
PC 61+91.78
CLEAR LINE
703+80.00
15.00 m RT.
49.33' RT.
703+89.51
15.00 m RT.
49.21' RT.
REMOVE PAVEMENT
GRADE TO DRAIN
CONST. LOAM, SEED
& RELATED ITEMS
705
MATCH TO SHEET NO. 57
GRID
PT 62+70.91
R=112m
63 Loop Road
S 36° 04' 07.5" E
broken asph
61+91.78
12.00 m RT.
39.37' RT.
MATCH TO SHEET NO. 54
62+70.91
12.00 m LT.
39.37' LT.
LIMIT OF WORK
121.92m (400 ft.)
WELL PROTECTION
AREA RADIUS
MATCH TO SHEET NO. 56
10 0 10 20 30 40
SCALE IN METERS
METRIC

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

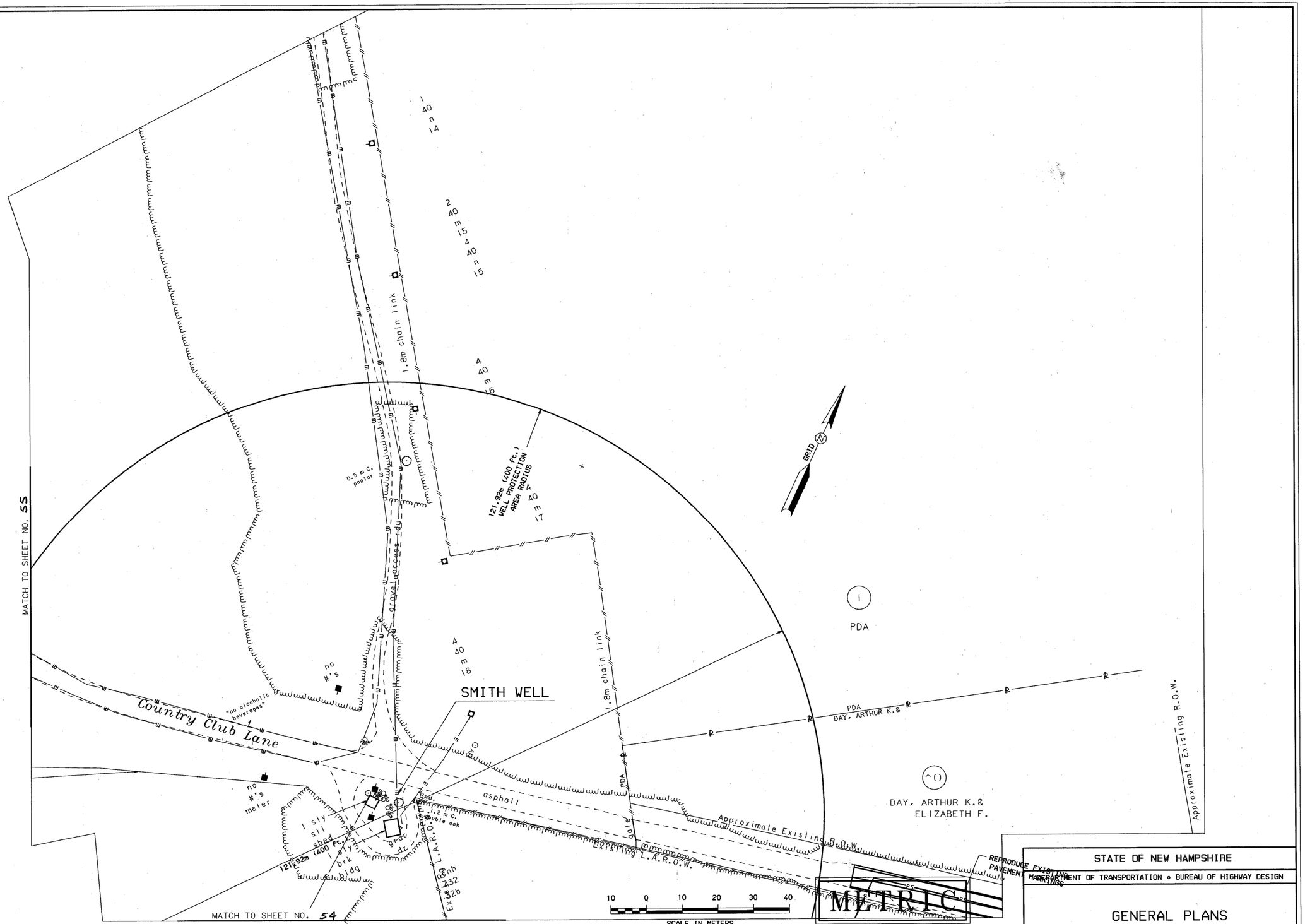
GENERAL PLANS

MULTIPLOT NAME	*.FGB FILE NAME	DRAWING NAME	WINDOW NAME	SHEET SCALE	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
	ASSEMBLER	SHEET11	GENSH11	1:500	CM-5379(017)	12250	55	282

REVISIONS AFTER PROPOSAL			
NUMBER	DATE	STATION	DESCRIPTION

NOTEBOOKS		
BOOK		PAGE
BOOK		PAGE
BOOK		PAGE

EXISTING DETAIL		DATE
PROPOSED DESIGN		DATE
SHEET CHECKED	J. KIROUAC, A. KING	DATE 8/98
CADD PLOT	E. RICHARDSON, J.HEBERT	DATE 8/98
AS BUILT DETAILS		DATE



STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

GENERAL PLANS

MULTIPLOT NAME	*.FGB FILE NAME	DRAWING NAME	WINDOW NAME	SHEET SCALE	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
	ASSEMBLER	SHEET12	GENSH12	1:500	CM-5379(017)	12250	56	282

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	DESCRIPTION

NOTEBOOKS		
	BOOK	PAGE
	BOOK	PAGE
	BOOK	PAGE

	DATE
EXISTING DETAIL	
PROPOSED DESIGN	DATE
SHEET CHECKED J. KIROUAC, A. KING	DATE 8/98
CADD PLOT E. RICHARDSON, J.HEBERT	DATE 8/98
AS BUILT DETAILS	DATE

MATCH TO SHEET NO. 55

2.5m chain link

gravel access rd

SOUTH ACCESS ROAD

N 01° 02' 32.5" W

706

707

Pt 705+22.43

PDA

CLEAR LINE

GRADE TO DRAIN
CONST. LOAM, SEED
& RELATED ITEMS

paved area

conc hdr pipe plugged

0.7m C. pine

gravel access rd

jersey barrier

MATCH TO SHEET NO. 58

REMOVE PAVEMENT
GRADE TO DRAIN
CONST. LOAM, SEED
& RELATED ITEMS

1.8m chain link

monitoring well

GRID

SCALE IN METERS 10 0 10 20 30 40

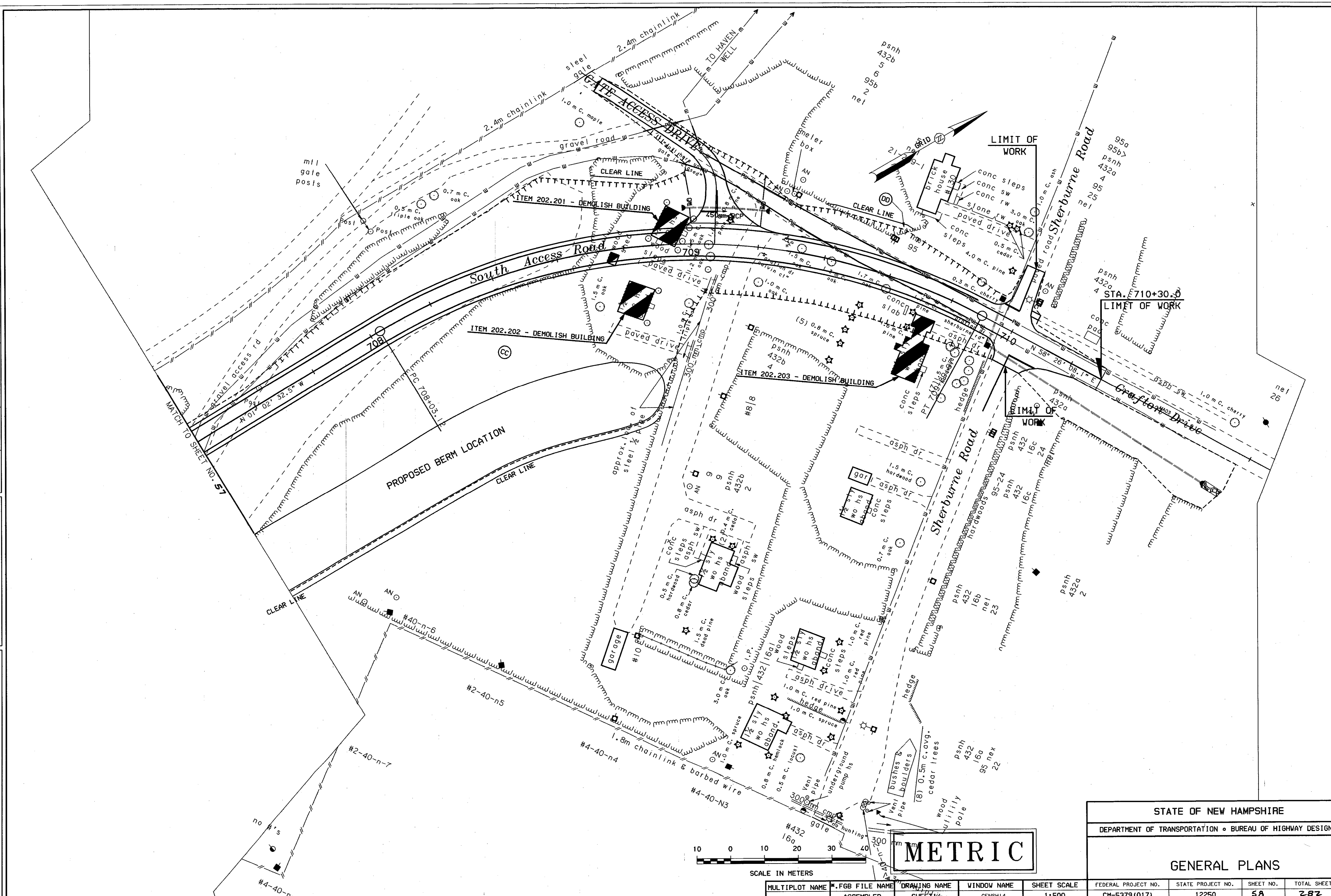
METRIC

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

GENERAL PLANS

MULTIPLOT NAME	*.FGB FILE NAME	DRAWING NAME	WINDOW NAME	SHEET SCALE	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
	ASSEMBLER	SHEET13	GENSHI3	1:500	CM-5379(017)	12250	57	282



REVISIONS AFTER PROPOSAL				
NUMBER	DATE	STATION	STATION	DESCRIPTION

NOTEBOOKS	
BOOK	PAGE
BOOK	PAGE
BOOK	PAGE

EXISTING DETAIL		DATE
PROPOSED DESIGN	J. KIROUAC, A. KING	DATE 8/98
SHEET CHECKED	E. RICHARDSON, J. HEBERT	DATE 8/98
CADD PLOT		DATE
AS BUILT DETAILS		DATE

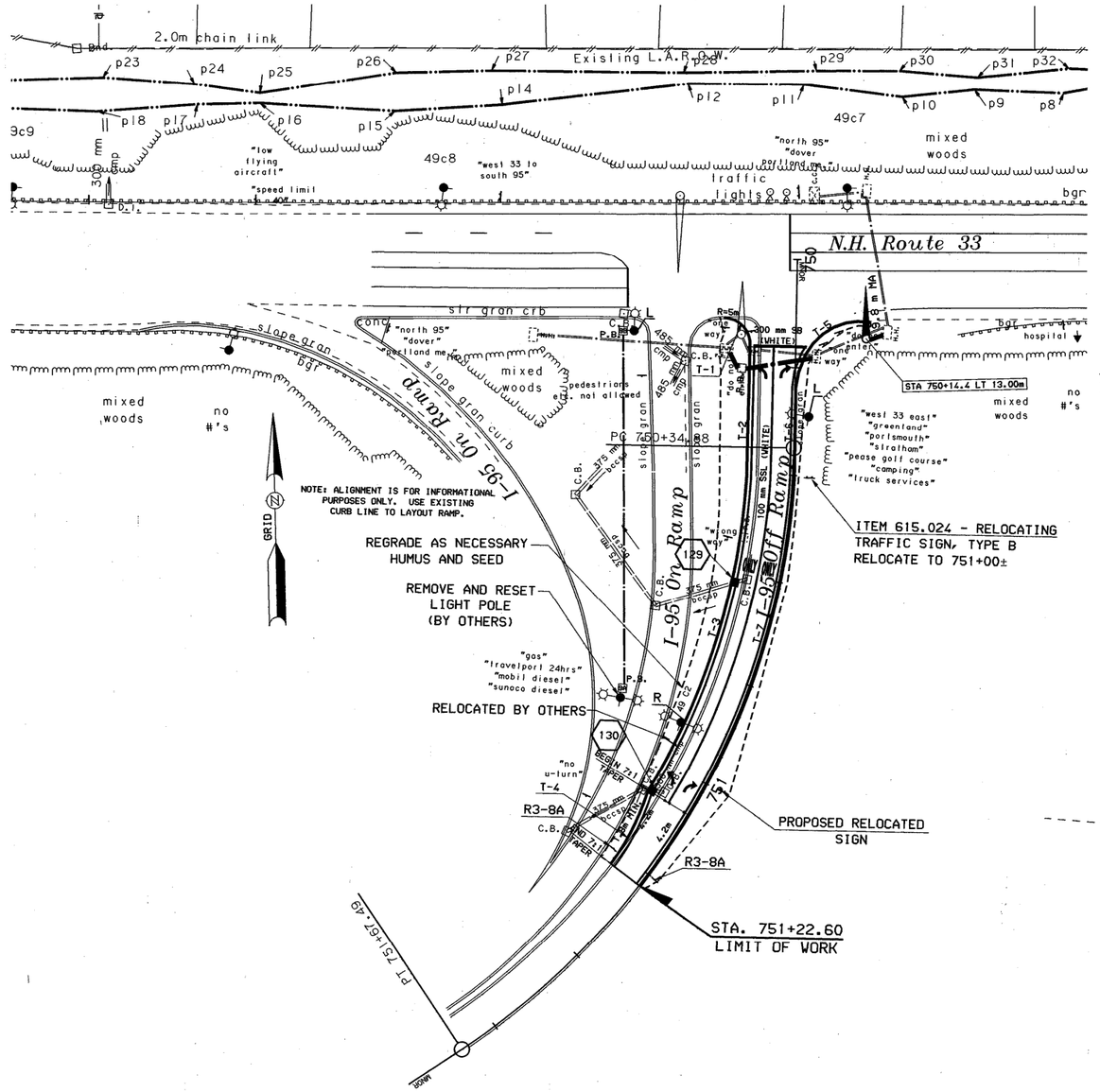
METRIC

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

GENERAL PLANS

MULTIPLOT NAME	*.FGB FILE NAME	DRAWING NAME	WINDOW NAME	SHEET SCALE	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
	ASSEMBLER	SHEET14	GENSH14	1:500	CM-5379(017)	12250	58	282

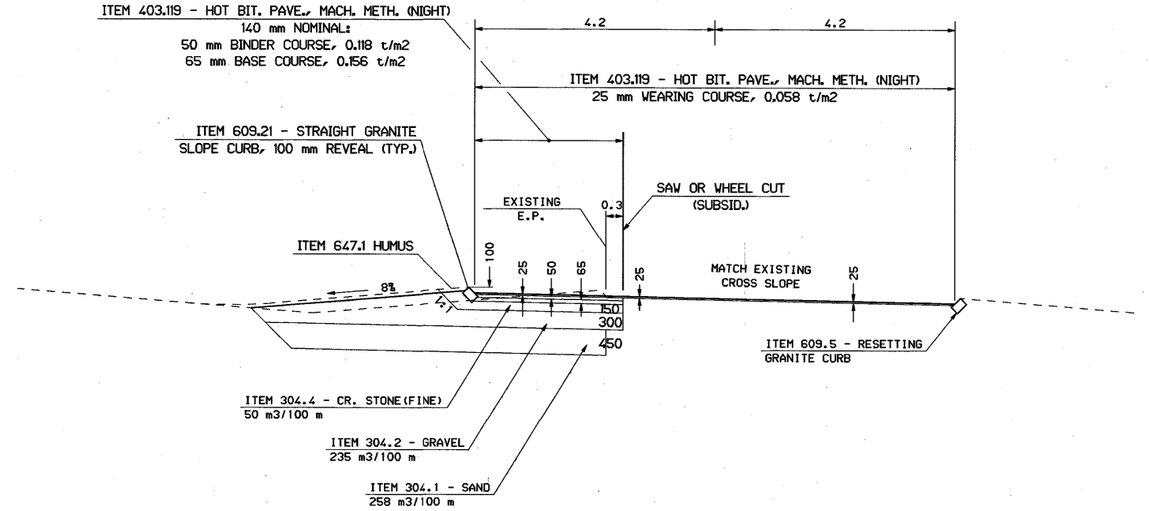


NOTES

(129) STA. 750+61.0 RT. 6m - STA. 750+62.0 RT. 8.1m
CONST. CB-B, +62.0, RT. 8.1m
300mm INV. OUT = 18.57
REMOVE EXIST. CB-B, +61.0, RT. 6m
REMOVE EXIST. 300mm CMP PIPE, FROM +61.0 TO +62.0

(130) STA. 751+05.0 RT. 6m - STA. 751+06.3 RT. 8.1m
CONST. CB-B, +06.3, RT. 8.1m
300mm INV. OUT = 17.29
REMOVE EXIST. CB-B, +05.0, RT. 6m
REMOVE EXIST. 300mm CMP PIPE, FROM +05.0 TO +06.3

LIGHTING CONDUIT SUMMARY			
		75 mm PVC SCH. 40	MOLDED PULLBOX
DESIG.	DESCRIPTION	614.70814	614.522
9A-9B	750+89.5 RT. 21.0 m± - 750+14.0 RT. 32.0m±	66.3m	2



NORTH BOUND OFF RAMP
TYPICAL SECTION

REVISIONS AFTER PROPOSAL			
NUMBER	DATE	STATION	DESCRIPTION

NOTEBOOKS		
BOOK	PAGE	
BOOK	PAGE	
BOOK	PAGE	

EXISTING DETAIL	DATE	
PROPOSED DESIGN	DATE	
SHEET CHECKED	J. KIROUAC	DATE 8/98
CADD PLOT	J. HEBERT	DATE 8/98
AS BUILT DETAILS		DATE

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

NORTH BOUND OFF RAMP PLAN

MULTI-PLOT	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
NBRMPSH01.DAT	NBRAMP01	PROP IN	CM-5379(017)	12250	59	282

REVISIONS AFTER PROPOSAL

NUMBER	DATE	DESCRIPTION	STATION

NOTEBOOKS

	BOOK	PAGE
	BOOK	PAGE
	BOOK	PAGE

	DATE
EXISTING DETAIL	
PROPOSED DESIGN	DATE
SHEET CHECKED	DATE -
	DATE
AS BUILT DETAILS	DATE

PDA

PDA
DAY, ARTHUR K.&

DAY, ARTHUR K.&
ELIZABETH F.

mixed woods

mixed woods

SMITH WELL

no #'s

"no alcoholic beverages"

y Club Lane

asphalt

Approximate Existing R.O.W.

Existing L.A.R.O.W.

Approximate Existing R.O.W.

REPRODUCE EXISTING PAVEMENT MARKINGS

100mm SSL (WHITE)

100mm DSL (YELLOW)

100mm SSL (WHITE)

300mm SB (WHITE)

1.8m chain link

1.2 m c. double oak

gtd

shed

bldg

brk

sly

sly

1400 ft.

121.92m (400 ft.) WELL PROTECTION AREA RADIUS

no #'s meter

no #'s

no #'s

ETER ROAD

0.6 m c. pine

0.8 m c. pine

0.9 m c. pine

65+28.17
9.00 m LT.
29.53' LT.

PT 65+28.17

L=122.7m

PDA

R.O.W.

Perimeter Road

Loop Road

PC 350+23.98

PT 350+63.02

66+00.00
32.22 m LT.
105.71' LT.

EQUATION:
STA. 65+87.924=
STA. 50+95.281

EQUATION:
STA. 50+60.000=
STA. 82+40.000

N 57° 58' 49.4" E

Existing L.A.R.O.W.

Approximate Existing R.O.W.

psnh
100
9al
nel
95
9s

1.8 m oak

2.5 m c. oak

slocknde

MIRASOLA, JOHN & MARY C.

2 sly wd fr barn

MIRASOLA, JOHN NEWBURY, CAROL

conc pad

asph dr

mem pad

sly wd fr

2.0 m c. oak

MIRASOLA, JOHN J.

ESBERG, JAMES D.

ESBERG, JAMES D.

SOLA, JOHN J.

ESBERG, JAMES D.

METRIC

10 0 10 20 30 40

SCALE IN METERS

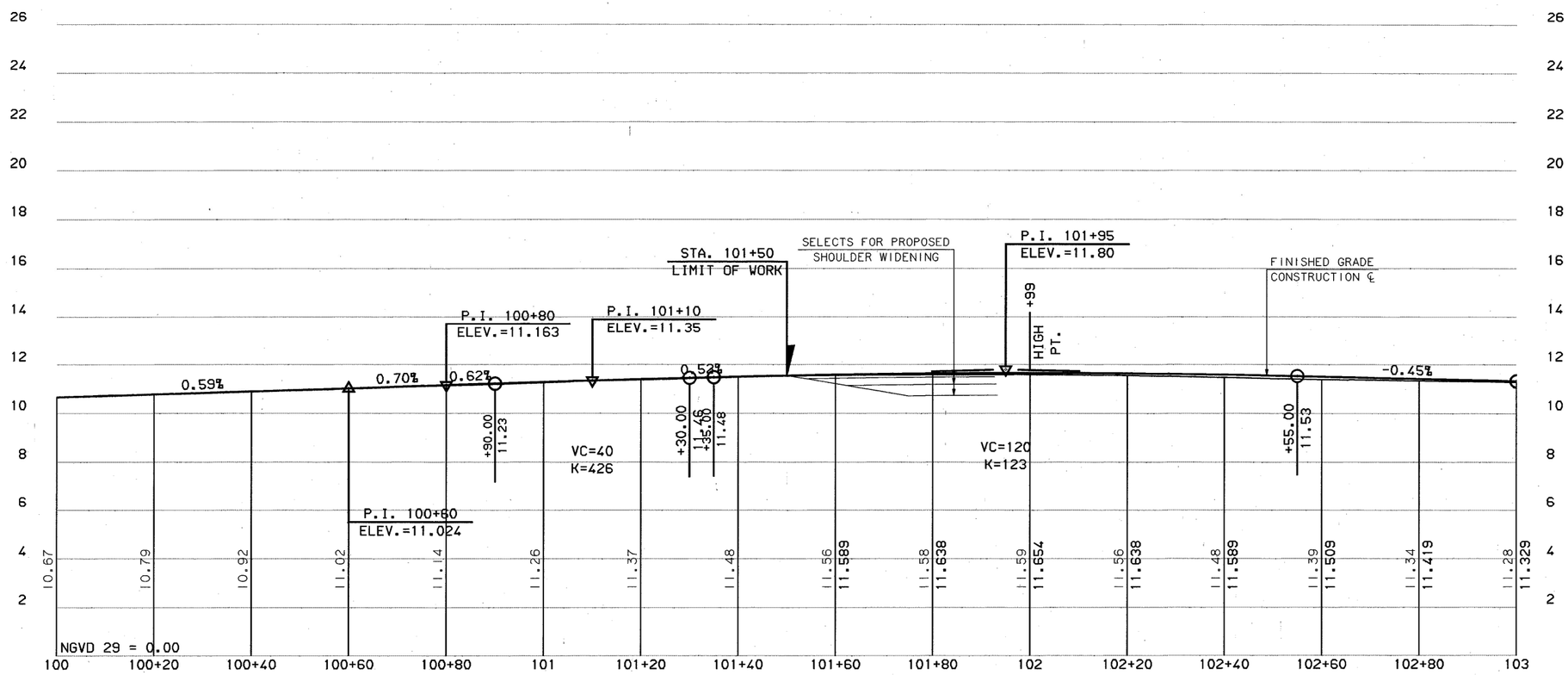
STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

COUNTRY CLUB LANE AND SHERBURNE ROAD INTERSECTION

MULTIPLOT	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
SHERB-GEN.DAT	SHERBGEN	PROP IN	CM-5379(017)	12250	60	282

N.H. RTE 33



SCALE: 1:500 HORIZONTAL
1:100 VERTICAL

METRIC

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF HIGHWAY DESIGN
PROFILE PLANS
NH RTE 33

MULTIPLOT NAME	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
MIIISHOI	M111	PROFILES	CM-X-5379(017)	12250	61	282

REVISIONS AFTER PROPOSAL

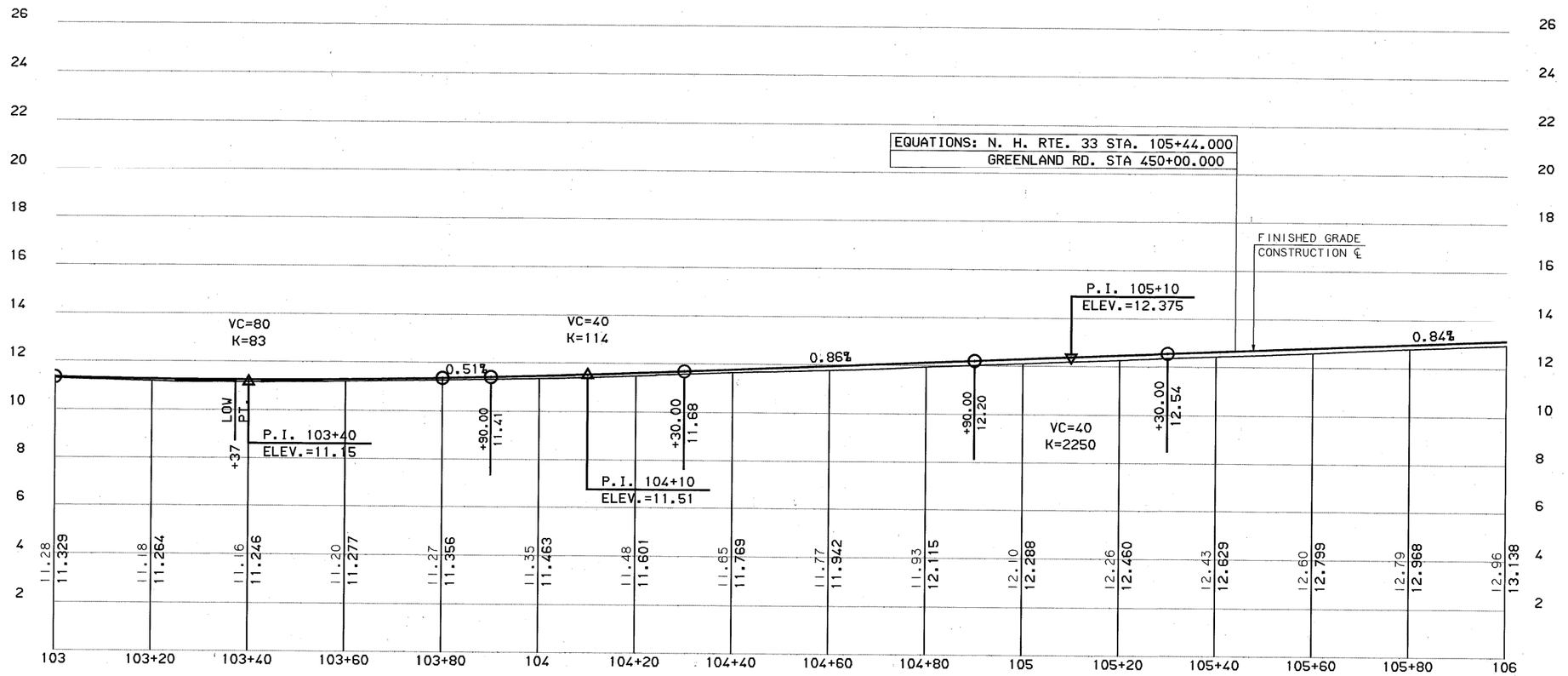
NUMBER	DATE	DESCRIPTION	STATION	STATION

NOTEBOOKS

BOOK	PAGE	BOOK	PAGE	BOOK	PAGE

	DATE
EXISTING DETAIL	
PROPOSED DESIGN	
SHEET CHECKED	
AS BUILT DETAILS	

N.H. RTE 33



SCALE: 1:500 HORIZONTAL
1:100 VERTICAL

METRIC

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION

NOTEBOOKS

BOOK PAGE
BOOK PAGE
BOOK PAGE

EXISTING DETAIL DATE
PROPOSED DESIGN DATE
SHEET CHECKED DATE

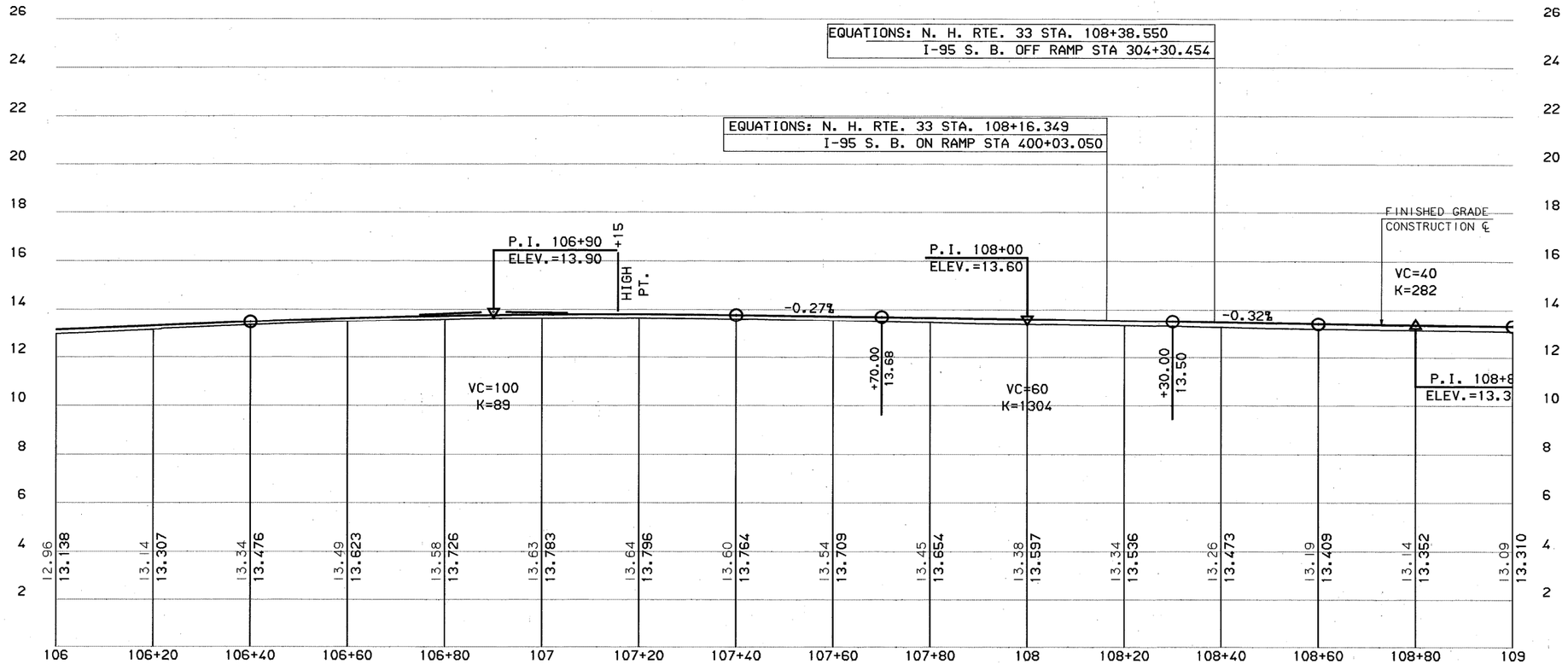
AS BUILT DETAILS DATE

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

PROFILE PLANS
NH RTE 33

MULTIPLOT NAME	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
M111SH02	M111	PROFILES	CM-X-5379(017)	12250	62	282

N.H. RTE 33



SCALE: 1:500 HORIZONTAL
1:100 VERTICAL

METRIC

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN
PROFILE PLANS
NH RTE 33

MULTIPLOT NAME	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
M111SH03	M111	PROFILES	CM-X-5379(017)	12250	63	282

REVISIONS AFTER PROPOSAL

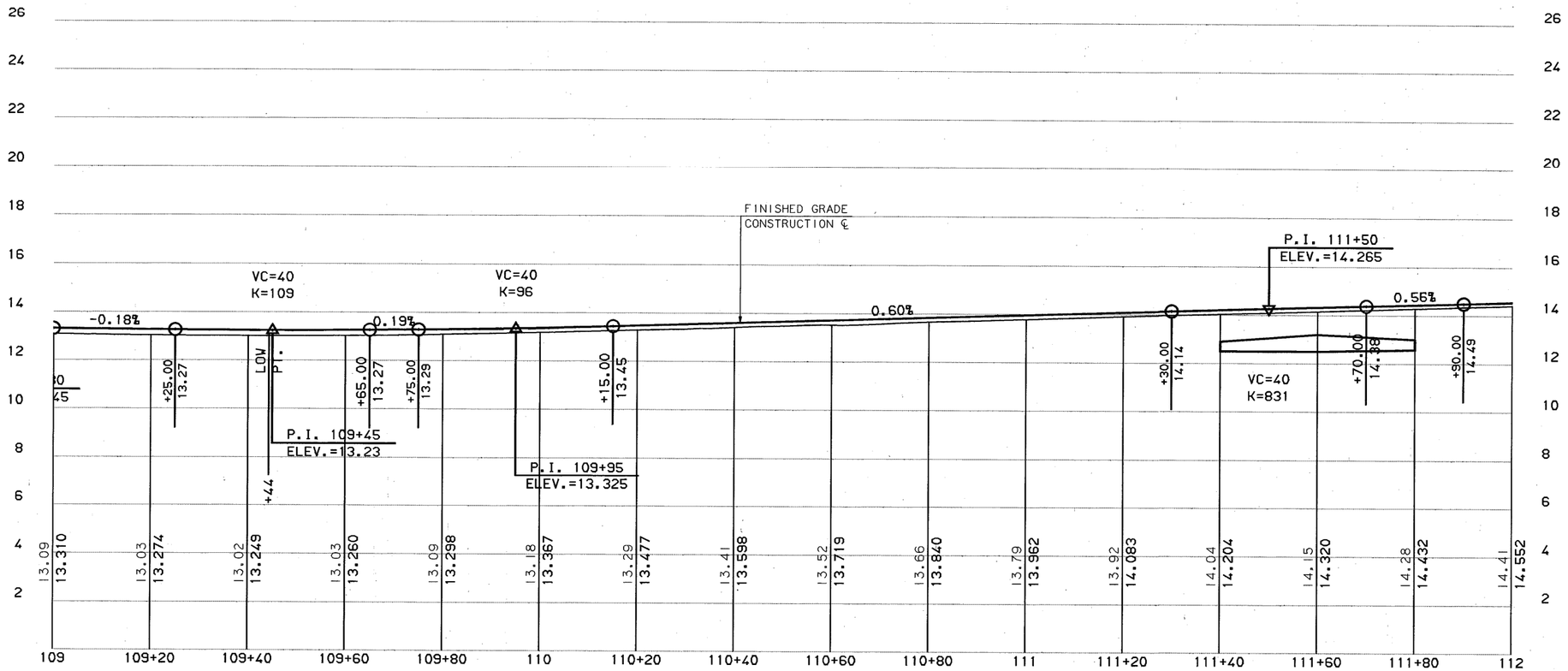
NUMBER	DATE	DESCRIPTION	STATION	STATION	DATE

NOTEBOOKS

BOOK		PAGE
BOOK		PAGE
BOOK		PAGE

EXISTING DETAIL	DATE
PROPOSED DESIGN	DATE
SHEET CHECKED	DATE
AS BUILT DETAILS	DATE

N.H. RTE 33



SCALE: 1:500 HORIZONTAL
1:100 VERTICAL

METRIC

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION

NOTEBOOKS

BOOK	PAGE	
BOOK	PAGE	
BOOK	PAGE	

EXISTING DETAIL	DATE
PROPOSED DESIGN	DATE
SHEET CHECKED	DATE
AS BUILT DETAILS	DATE

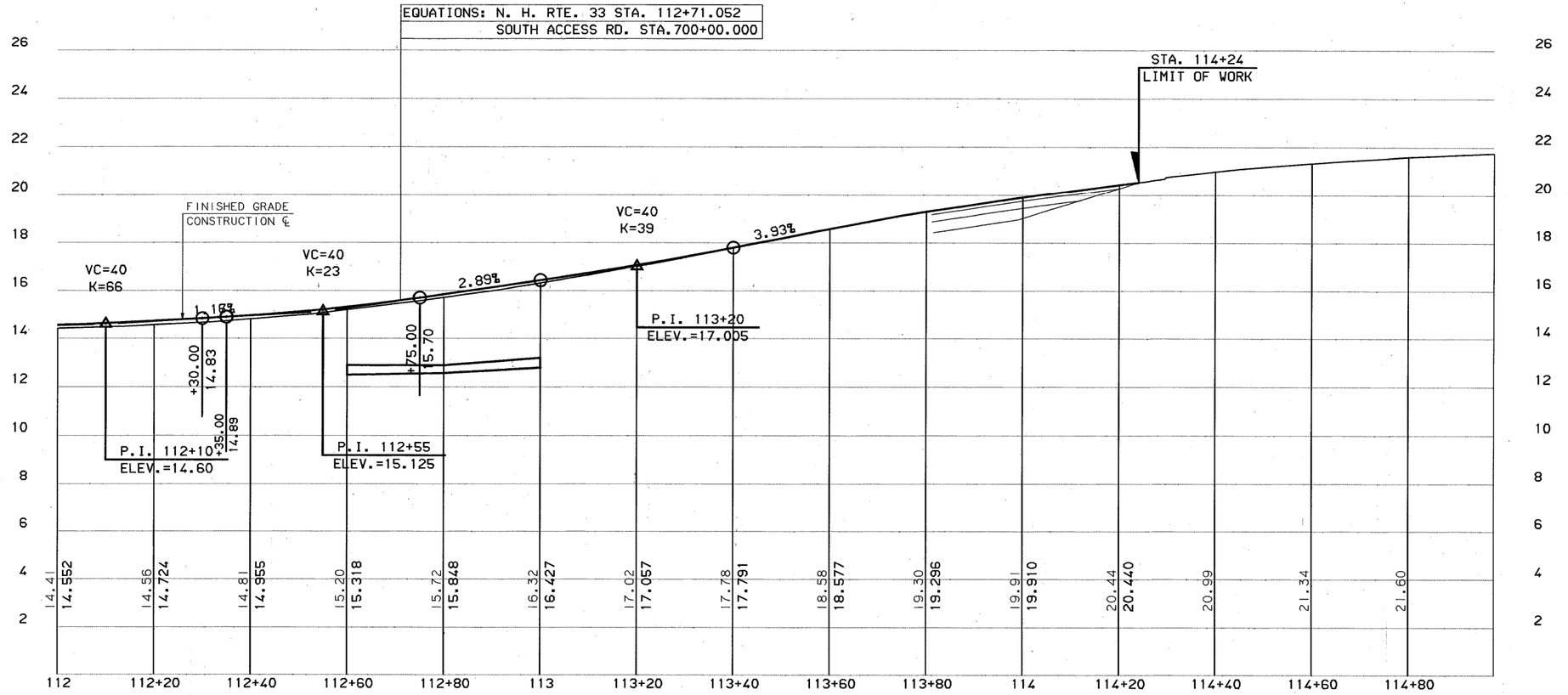
STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION ◦ BUREAU OF HIGHWAY DESIGN

PROFILE PLANS
NH RTE 33

MULTIPLOT NAME	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
M111SH04	M111	PROFILES	CM-X-5379(017)	12250	64	282

N.H. RTE 33



REVISIONS AFTER PROPOSAL

NUMBER	DESCRIPTION	STATION	STATION	DATE

NOTEBOOKS

BOOK	PAGE	BOOK	PAGE	BOOK	PAGE

EXISTING DETAIL	DATE
PROPOSED DESIGN	DATE
SHEET CHECKED	DATE
AS BUILT DETAILS	DATE

SCALE: 1:500 HORIZONTAL
1:100 VERTICAL

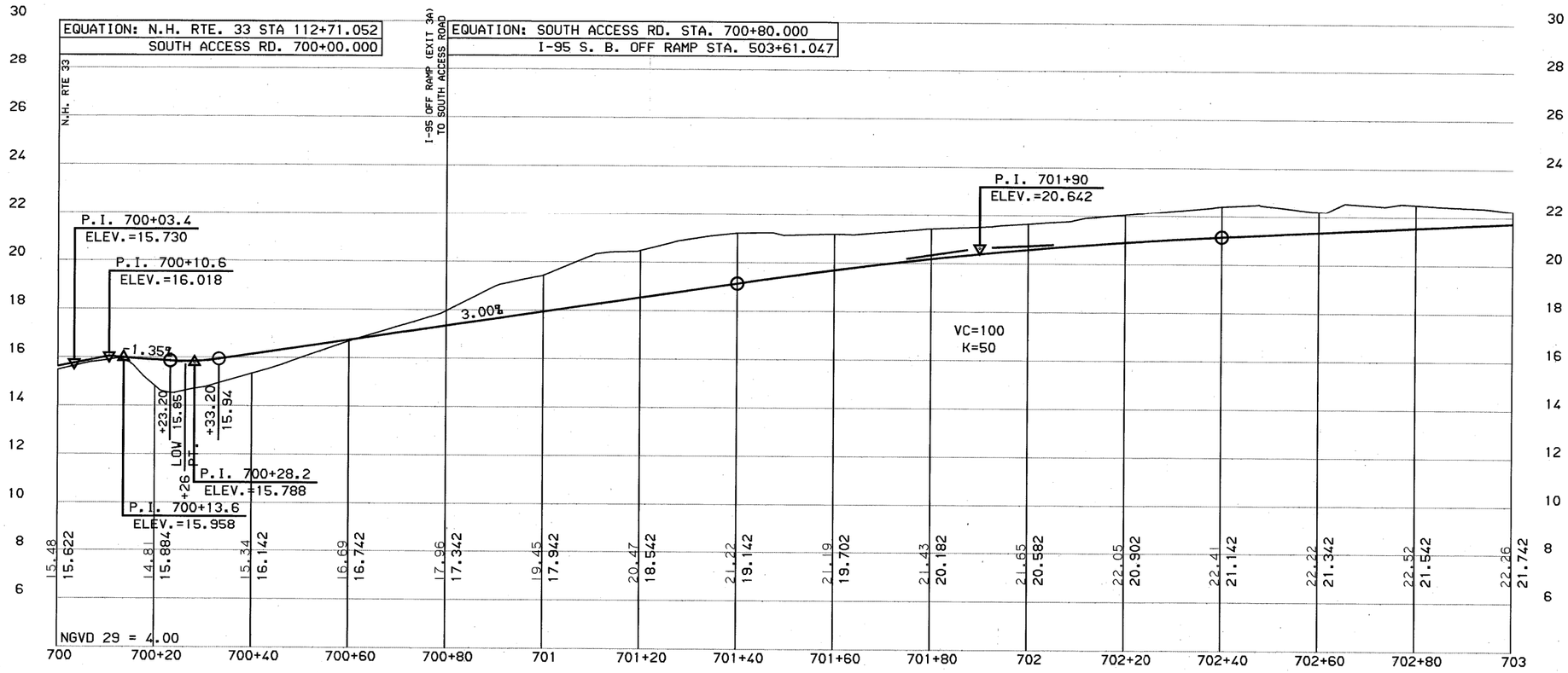
METRIC

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

PROFILE PLANS
NH RTE 33

MULTIPLOT NAME	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
M111SH05	M111	PROFILES	CM-X-5379(017)	12250	65	282

SOUTH ACCESS ROAD



SCALE: 1:500 HORIZONTAL
1:100 VERTICAL

METRIC

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION

NOTEBOOKS

BOOK	PAGE	BOOK	PAGE	BOOK	PAGE

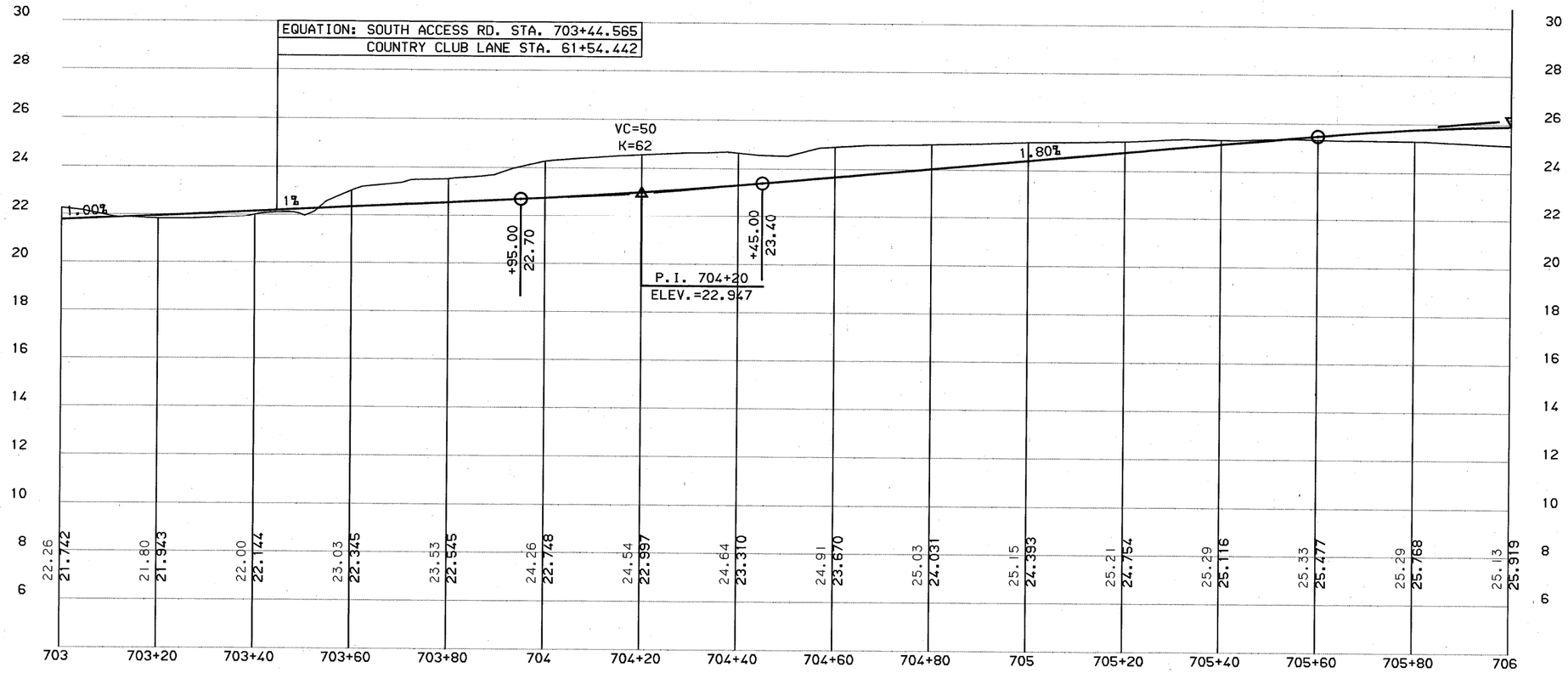
EXISTING DETAIL	DATE
PROPOSED DESIGN	DATE
SHEET CHECKED	DATE
AS BUILT DETAILS	DATE

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

PROFILE PLANS
SOUTH ACCESS RD

MULTIPLOT NAME	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
M107SH01	M107	PROFILES	CM-X-5379(017)	12250	66	282

SOUTH ACCESS ROAD



SCALE: 1:500 HORIZONTAL
1:100 VERTICAL

METRIC

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

PROFILE PLANS
SOUTH ACCESS RD

MULTIPLOT NAME	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
M107SH02	M107	PROFILES	CM-X-5379(017)	12250	67	282

REVISIONS AFTER PROPOSAL

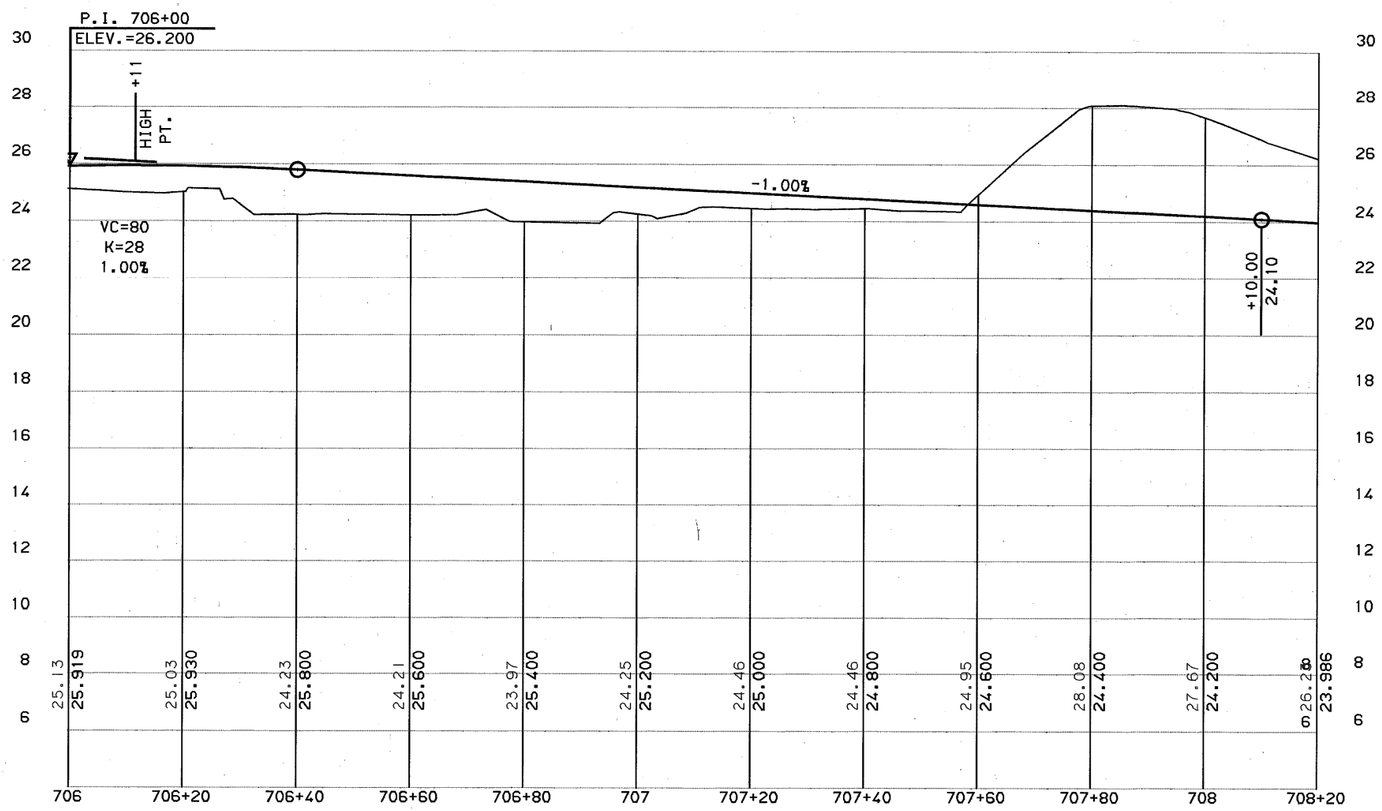
NUMBER	DATE	STATION	STATION	DESCRIPTION

NOTEBOOKS

BOOK		PAGE
BOOK		PAGE
BOOK		PAGE

EXISTING DETAIL	DATE
PROPOSED DESIGN	DATE
SHEET CHECKED	DATE
AS BUILT DETAILS	DATE

SOUTH ACCESS ROAD



SCALE: 1:500 HORIZONTAL
1:100 VERTICAL

METRIC

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

PROFILE PLANS
SOUTH ACCESS ROAD

MULTIPLOT NAME	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
MI07SH03	MI07	PROFILES	CM-X-5379(017)	12250	68	282

REVISIONS AFTER PROPOSAL

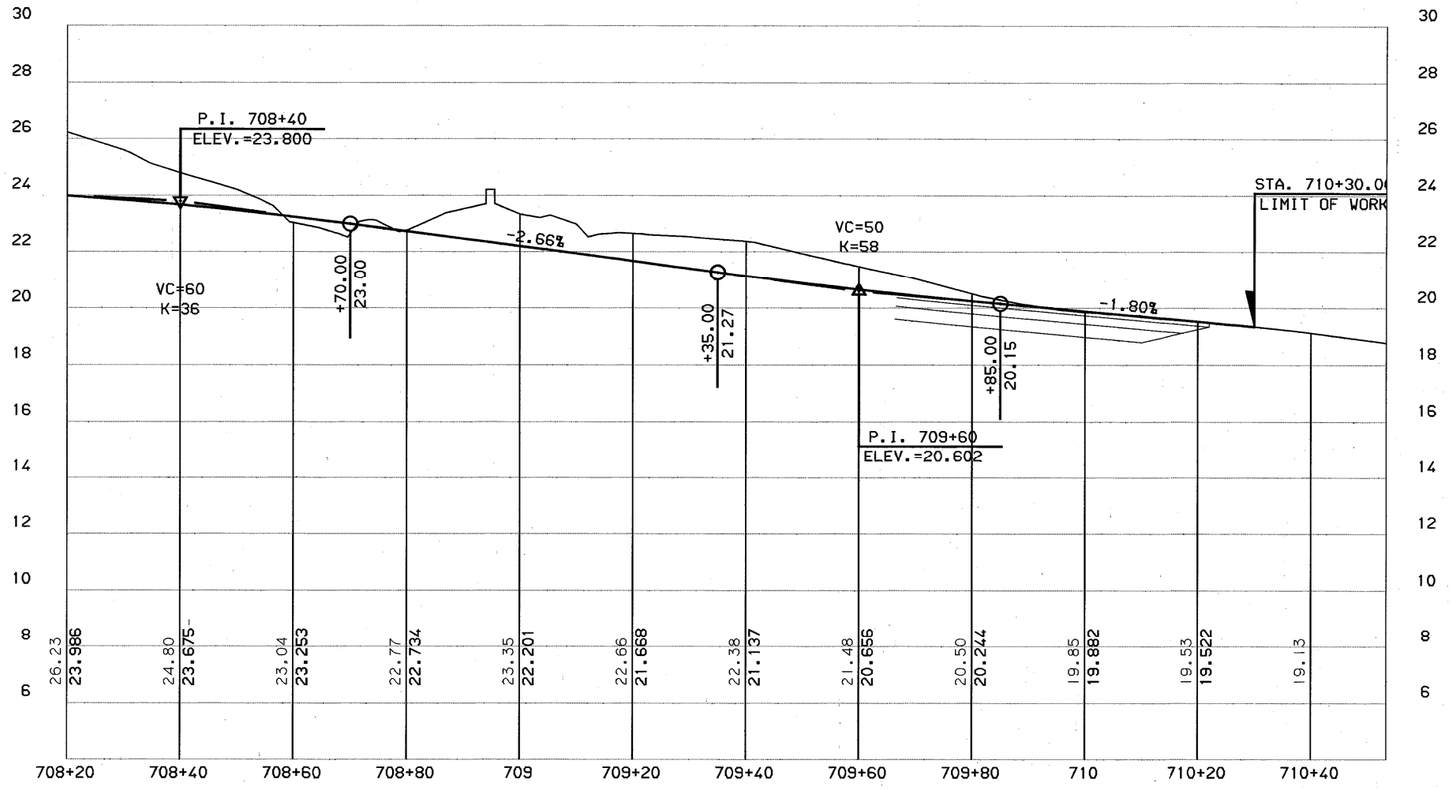
NUMBER	DATE	STATION	STATION	DESCRIPTION

NOTEBOOKS

BOOK		PAGE
BOOK		PAGE
BOOK		PAGE

EXISTING DETAIL	DATE
PROPOSED DESIGN	DATE
SHEET CHECKED	DATE
AS BUILT DETAILS	DATE

SOUTH ACCESS ROAD



SCALE: 1:500 HORIZONTAL
1:100 VERTICAL

METRIC

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION

NOTEBOOKS

BOOK	PAGE	
BOOK	PAGE	
BOOK	PAGE	

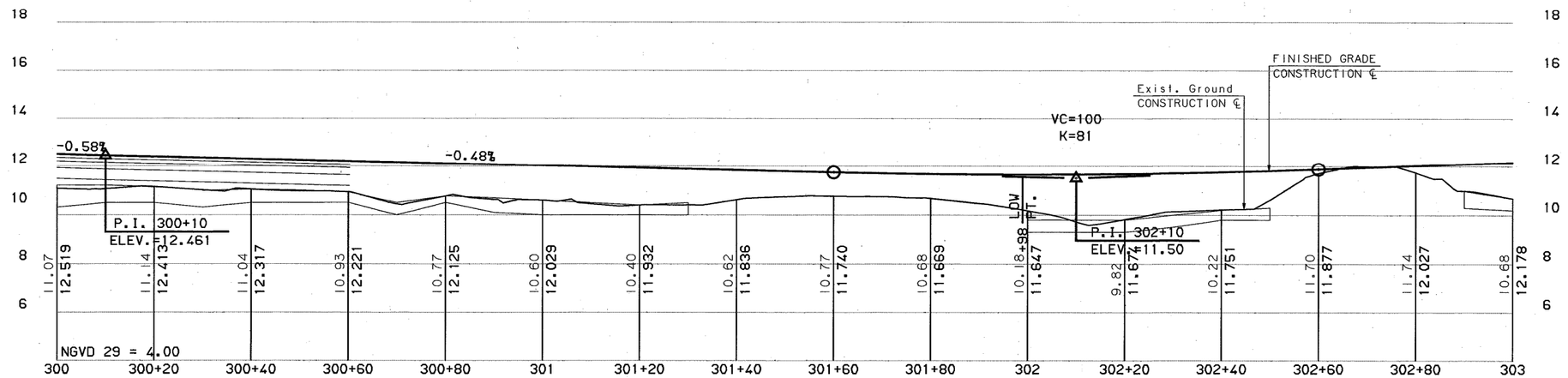
EXISTING DETAIL	DATE
PROPOSED DESIGN	DATE
SHEET CHECKED	DATE
AS BUILT DETAILS	DATE

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

PROFILE PLANS
SOUTH ACCESS RD

MULTIPLOT NAME	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
M107SH04	M107	PROFILES	CM-X-5379(017)	12250	69	282

I-95 SB OFF RAMP - EXIT 3B



SCALE: 1:500 HORIZONTAL
1:100 VERTICAL

METRIC

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF HIGHWAY DESIGN
PROFILE PLANS
SB OFF RAMP (EXIT 3B)

MULTIPLOT NAME	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
M521SH01	M521	PROFILES	CM-X-5379(017)	12250	70	282

REVISIONS AFTER PROPOSAL

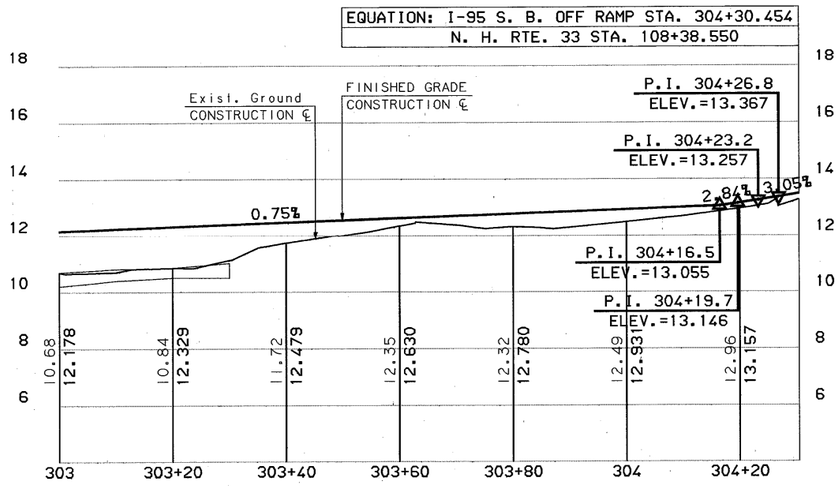
NUMBER	DATE	STATION	DESCRIPTION

NOTEBOOKS

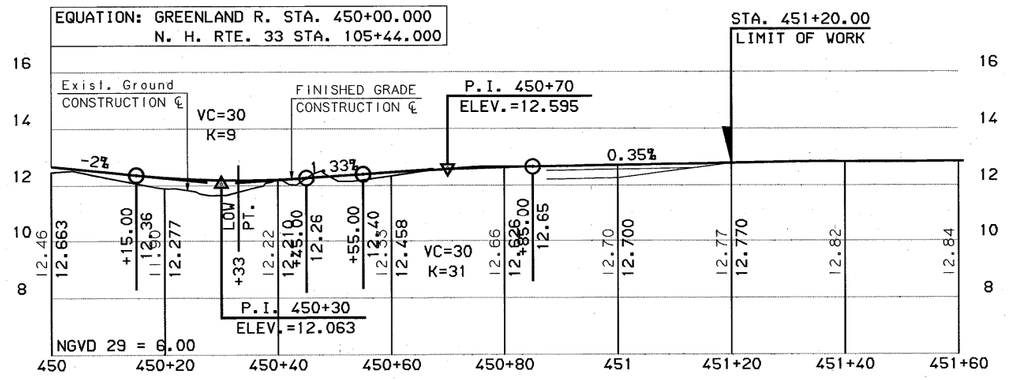
BOOK	PAGE	
BOOK	PAGE	
BOOK	PAGE	

EXISTING DETAIL	DATE
PROPOSED DESIGN	DATE
SHEET CHECKED	DATE
AS BUILT DETAILS	DATE

I-95 SB OFF RAMP - EXIT 3B



GREENLAND ROAD



SCALE: 1:500 HORIZONTAL
1:100 VERTICAL

METRIC

REVISIONS AFTER PROPOSAL

NUMBER	DESCRIPTION	DATE	STATION	STATION

NOTEBOOKS

BOOK	PAGE	BOOK	PAGE	BOOK	PAGE

	DATE
EXISTING DETAIL	
PROPOSED DESIGN	
SHEET CHECKED	
AS BUILT DETAILS	

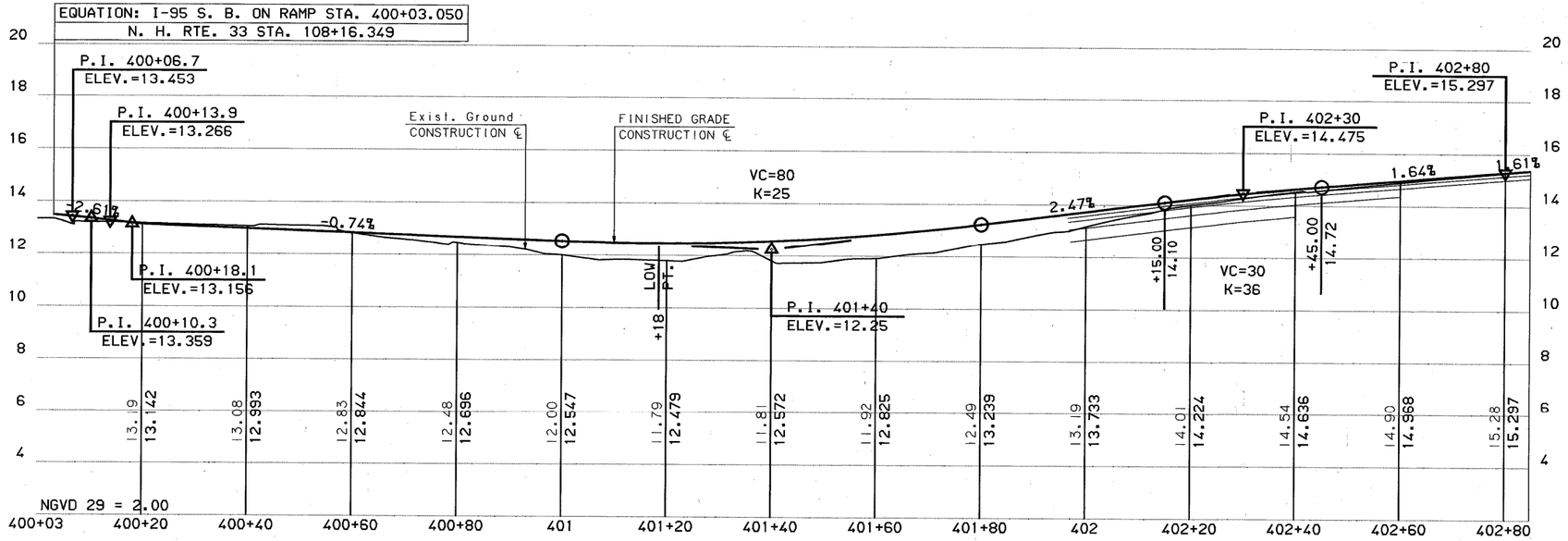
STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF HIGHWAY DESIGN

PROFILE PLANS
SB OFF RAMP (EXIT 3B)
GREENLAND ROAD

MULTIPLOT NAME	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
M521SH02	M521/M444	PROFILES	CM-X-5379(017)	12250	71	282

I-95 SB ON RAMP



SCALE: 1:500 HORIZONTAL
1:100 VERTICAL

METRIC

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF HIGHWAY DESIGN
PROFILE PLANS
SB ON RAMP

MULTIPLOT NAME	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
M503SH01	M503	PROFILES	CM-X-5379(017)	12250	72	282

REVISIONS AFTER PROPOSAL

NUMBER	DESCRIPTION	STATION	DATE

NOTEBOOKS

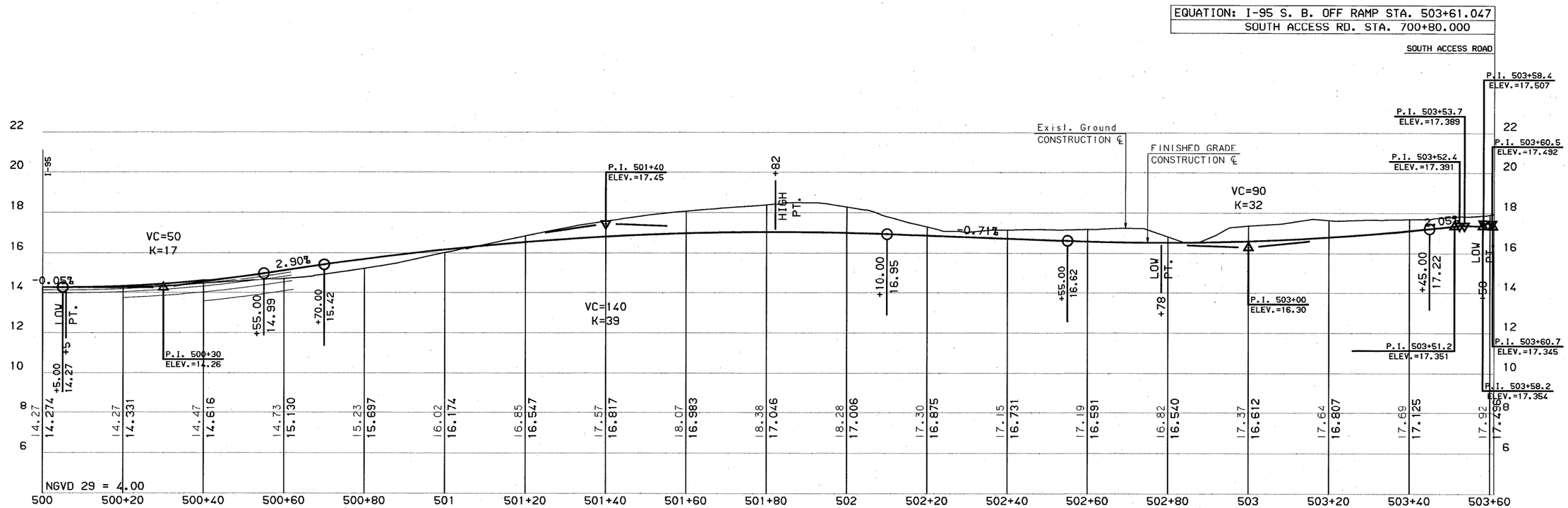
BOOK	PAGE	
BOOK	PAGE	
BOOK	PAGE	

EXISTING DETAIL DATE
PROPOSED DESIGN DATE
SHEET CHECKED DATE

AS BUILT DETAILS DATE

I-95 SB OFF RAMP - EXIT 3A

EQUATION: I-95 S. B. OFF RAMP STA. 503+61.047
SOUTH ACCESS RD. STA. 700+80.000



SCALE: 1:500 HORIZONTAL
1:100 VERTICAL

METRIC

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	DESCRIPTION

NOTEBOOKS

BOOK	PAGE	
BOOK	PAGE	
BOOK	PAGE	

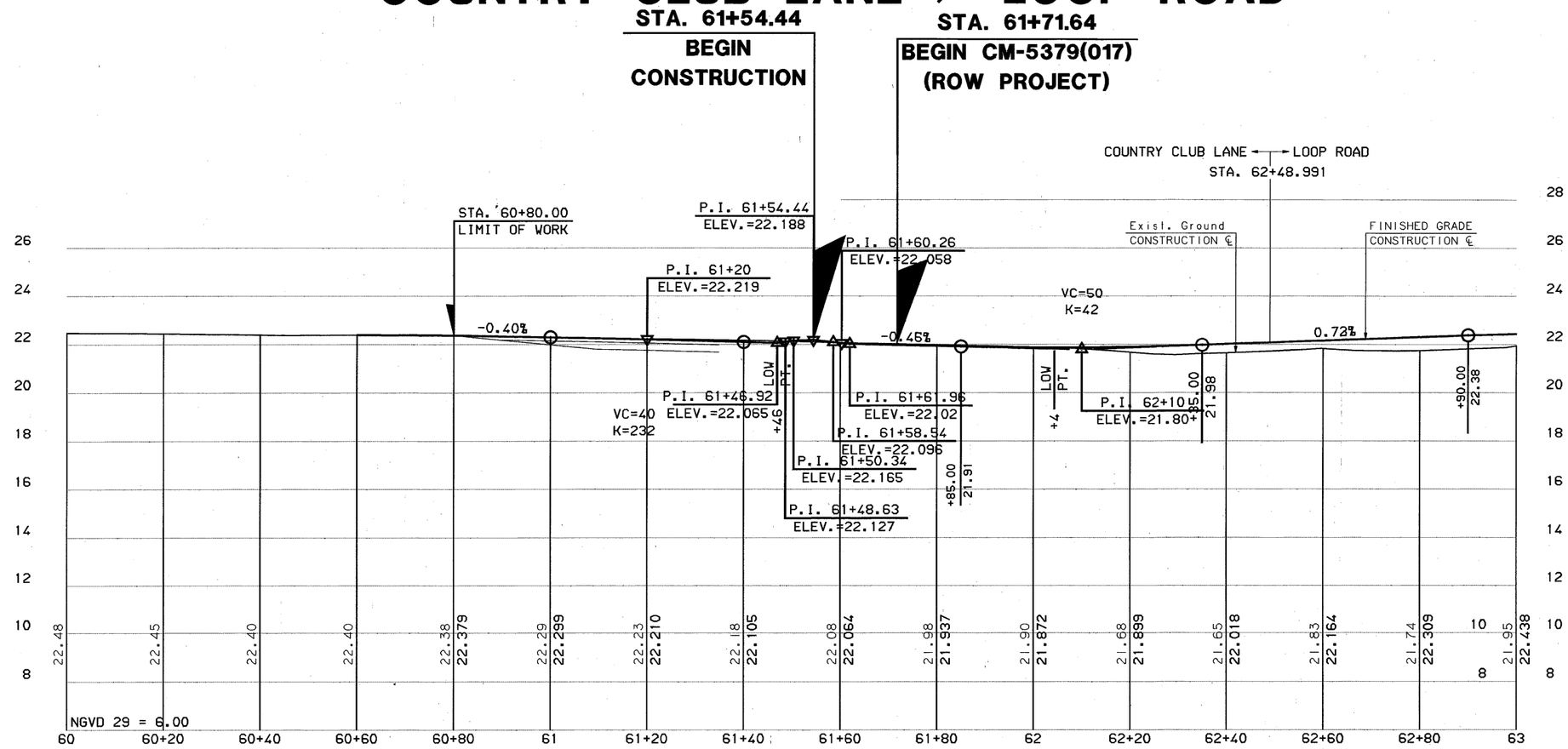
EXISTING DETAIL	DATE
PROPOSED DESIGN	DATE
SHEET CHECKED	DATE
AS BUILT DETAILS	DATE

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

PROFILE PLANS
I-95 SB OFF RAMP

MULTIPLOT NAME	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
M500SH01	M500	PROFILES	CM-X-5379(017)	12250	73	282

COUNTRY CLUB LANE / LOOP ROAD



SCALE: 1:500 HORIZONTAL
1:100 VERTICAL

METRIC

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

PROFILE PLANS
COUNTRY CLUB LANE / LOOP ROAD

MULTIPLOT NAME	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
M146SH01	M146	PROFILES	CM-X-5379(017)	12250	74	282

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION

NOTEBOOKS

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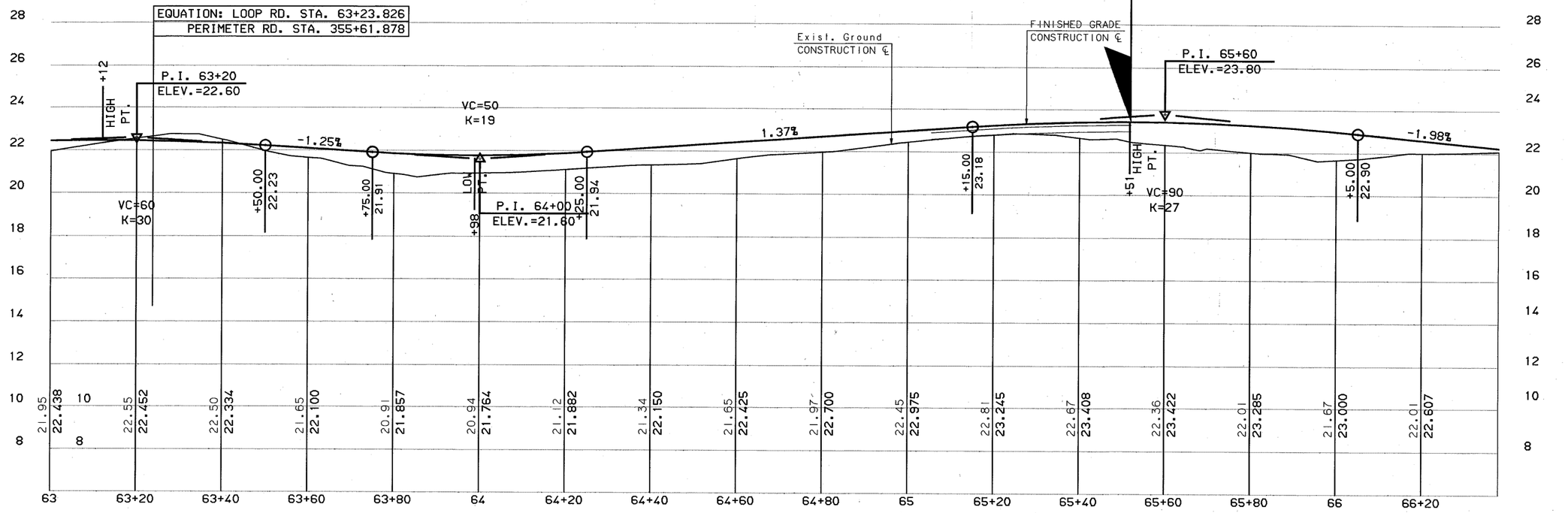
BOOK	PAGE	
BOOK	PAGE	

EXISTING DETAIL	DATE
PROPOSED DESIGN	DATE
SHEET CHECKED	DATE
AS BUILT DETAILS	DATE

LOOP ROAD

STA. 65+52.10
END CM-5379(017)
(ROW PROJECT)



SCALE: 1:500 HORIZONTAL
1:100 VERTICAL

METRIC

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN
PROFILE PLANS
LOOP ROAD

MULTIPLOT NAME	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
M146SH02	M146	PROFILES	CM-X-5379(017)	12250	75	282

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION

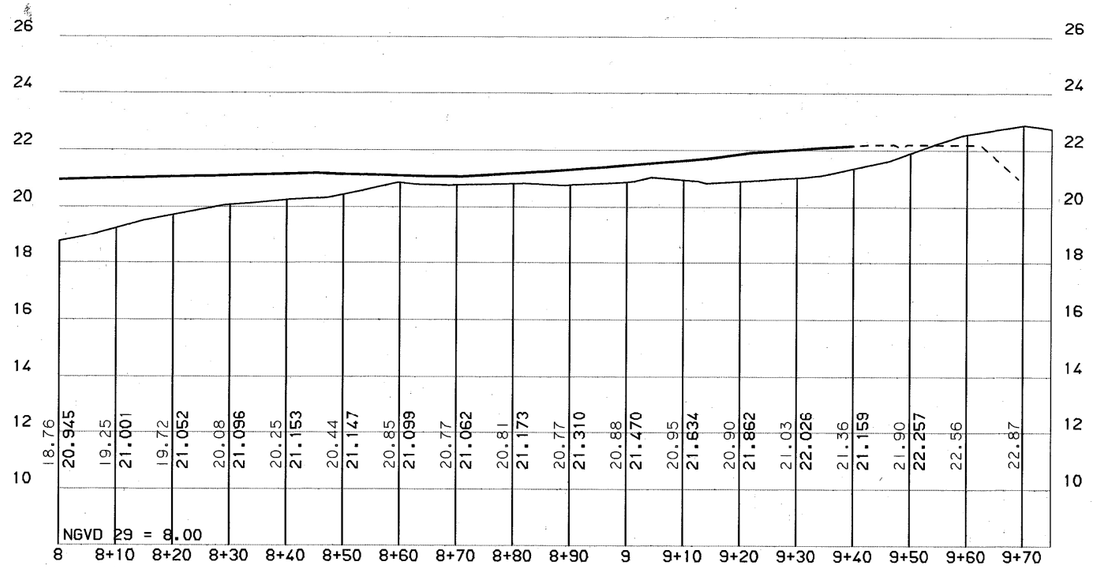
NOTEBOOKS

BOOK	PAGE	BOOK	PAGE	BOOK	PAGE

EXISTING DETAIL DATE
PROPOSED DESIGN DATE
SHEET CHECKED DATE
AS BUILT DETAILS DATE

PARKING LOT

M118 ALIGNMENT



SCALE: 1:500 HORIZONTAL
1:100 VERTICAL

METRIC

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF HIGHWAY DESIGN

PROFILE PLANS
PARKING LOT

MULTIPLOT NAME	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
M118SH01	M118	PROFILES	CM-X-5379(017)	12250	76	282

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION

NOTEBOOKS

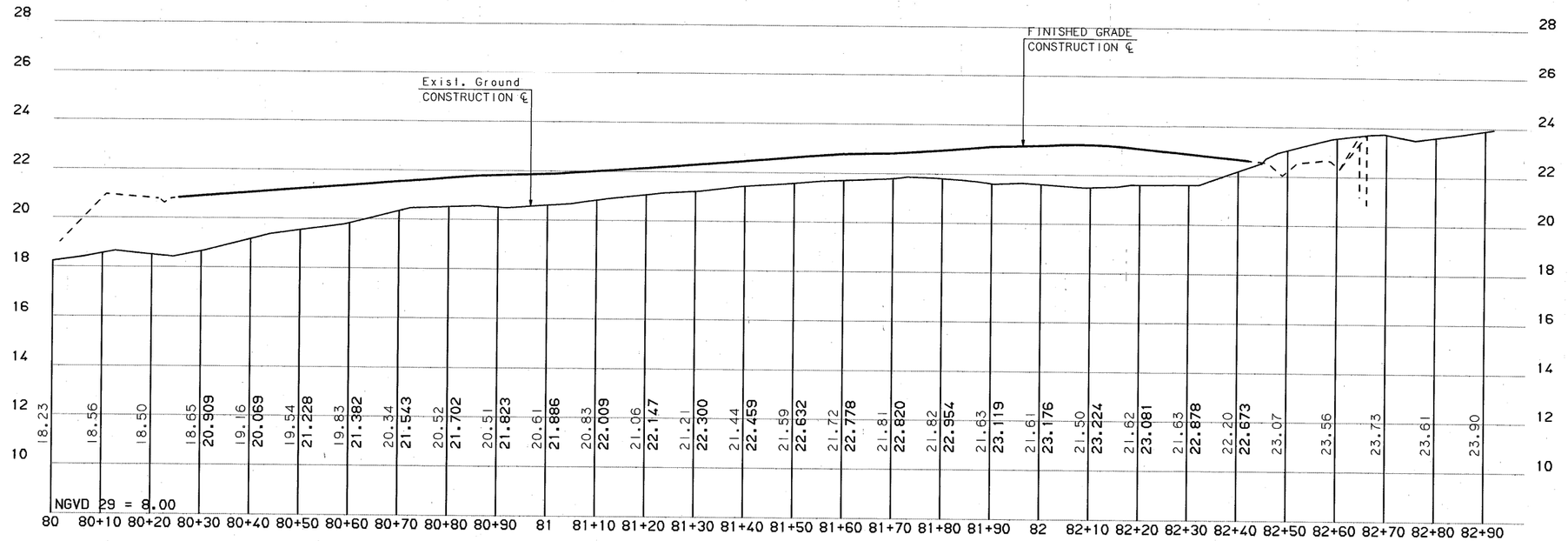
BOOK PAGE
BOOK PAGE
BOOK PAGE

EXISTING DETAIL DATE
PROPOSED DESIGN DATE
SHEET CHECKED DATE

AS BUILT DETAILS DATE

PARKING LOT

M108 ALIGNMENT



SCALE: 1:500 HORIZONTAL
1:100 VERTICAL

METRIC

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF HIGHWAY DESIGN

PROFILE PLANS
PARKING LOT

MULTIPLOT NAME	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
M108SH01	M108	PROFILES	CM-X-5379(017)	12250	77	282

REVISIONS AFTER PROPOSAL

NUMBER	DATE	DESCRIPTION	STATION	STATION

NOTEBOOKS

BOOK	PAGE	BOOK	PAGE
BOOK	PAGE	BOOK	PAGE

EXISTING DETAIL	DATE
PROPOSED DESIGN	DATE
SHEET CHECKED	DATE
AS BUILT DETAILS	DATE

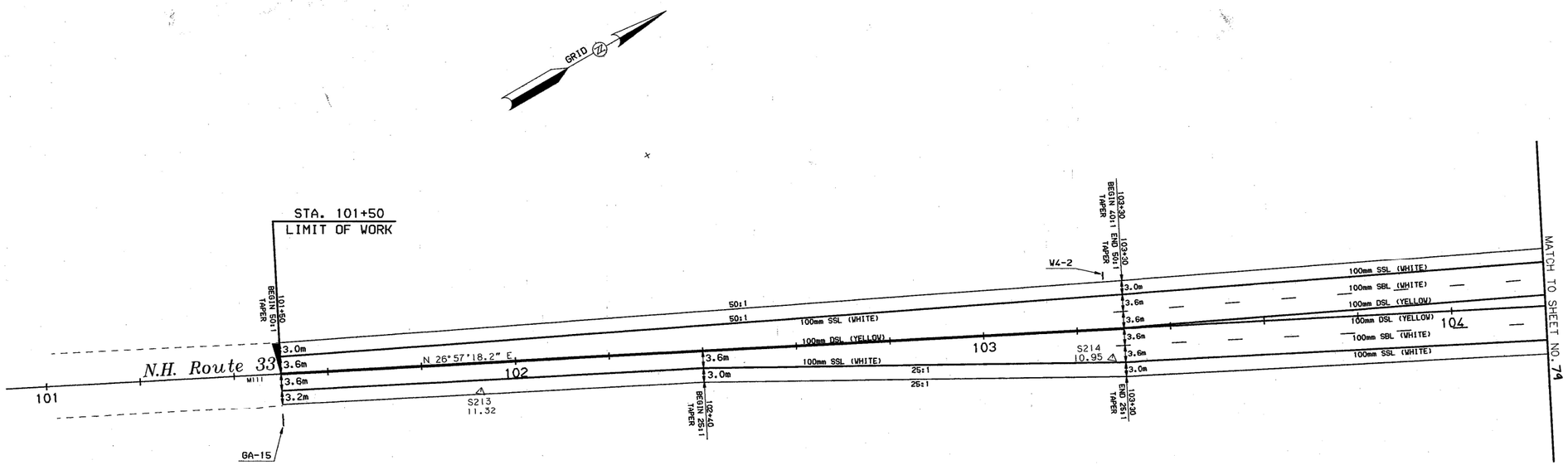
REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION

NOTEBOOKS

BOOK		PAGE
BOOK		PAGE
BOOK		PAGE

EXISTING DETAIL		DATE
PROPOSED DESIGN		DATE
SHEET CHECKED	J. KIROUAC, A. KING	DATE 8/98
CADD PLOT	E. RICHARDSON, J. HEBERT	DATE 8/98
AS BUILT DETAILS		DATE



NOTE: ALL PAVEMENT MARKINGS ON NH ROUTE 33 SHALL BE ITEM 632.3110 RETROREFLECTIVE THERMOPLASTIC PAVE. MARKING 100mm LINE. EXCEPT WHERE NOTED.

LEGEND

PAVEMENT MARKING

SSL	-	SINGLE SOLID LINE
DSL	-	DOUBLE SOLID LINE
SBL	-	SINGLE BROKEN LINE
DBL	-	DOUBLE BROKEN LINE
DL	-	DOUBLE LINE-SOLID W/BROKEN
SB	-	STOP BAR

10 0 10 20 30 40

SCALE IN METERS

METRIC

MULTIPLOT NAME	*.FGB FILE NAME	DRAWING NAME	WINDOW NAME	SHEET SCALE
	ASSEMBLER	SHEET01	PVTSH01	1:500

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

SIGNING, CURBING, PAVEMENT LAYOUT & MARKING PLAN

FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
CM-5379(017)	12250	78	282

REVISIONS AFTER PROPOSAL

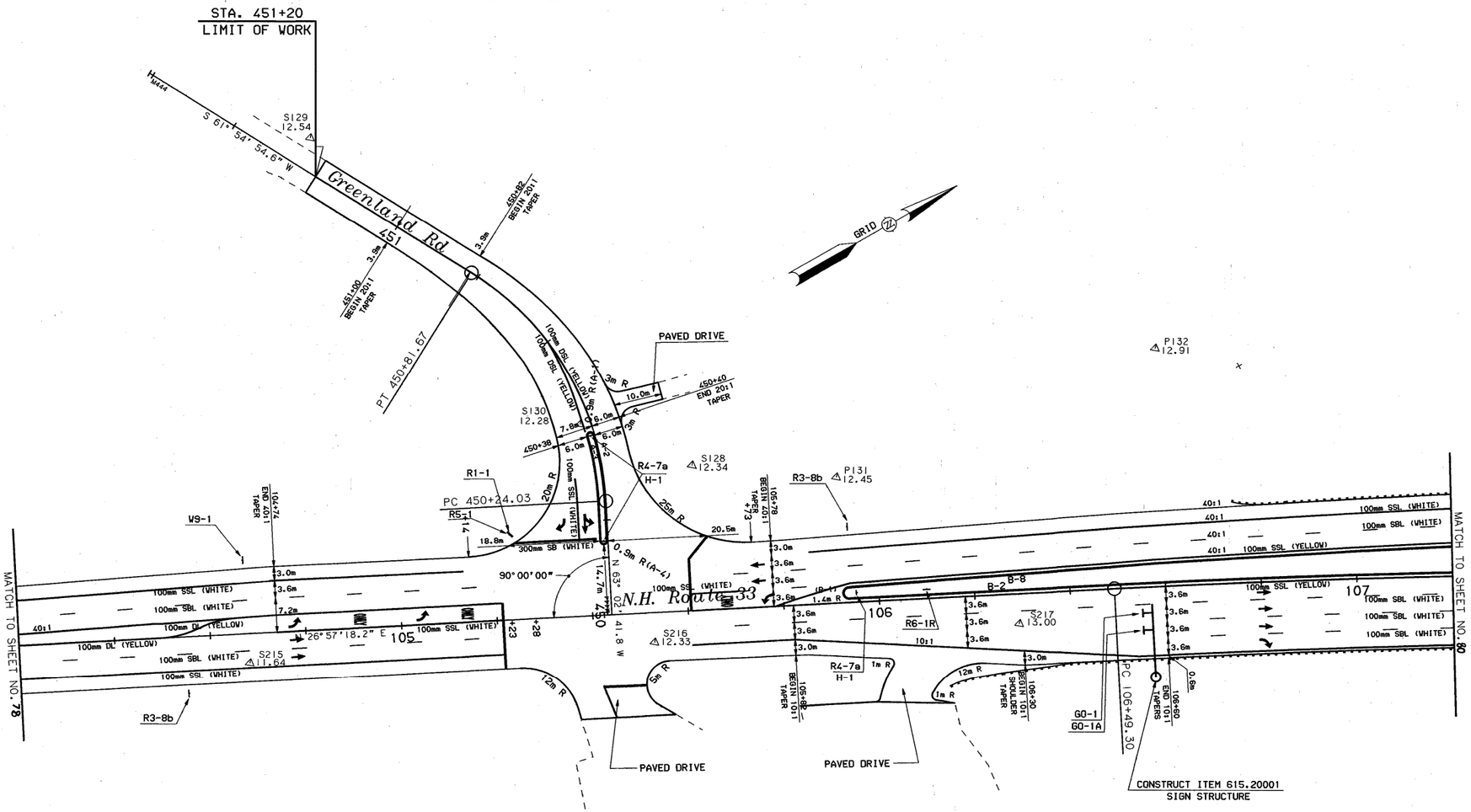
NUMBER	DESCRIPTION	STATION	STATION	DATE

NOTEBOOKS

BOOK	PAGE	
BOOK	PAGE	
BOOK	PAGE	

EXISTING DETAIL		DATE
PROPOSED DESIGN		DATE
SHEET CHECKED	J. KIROUAC, A. KING	DATE 8/98
CADD PLOT	E. RICHARDSON, J. HEBERT	DATE 8/98
AS BUILT DETAILS		DATE

CURVE # 2
PI=107+26.41
N = 62022.827
E =369662.640
△ =03° -32' -00.2" RIGHT
T = 77.111 m
R =2500.000 m
L =154.173 m
E = 1.189 m



LEGEND

PAVEMENT MARKING

SSL - SINGLE SOLID LINE
DSL - DOUBLE SOLID LINE
SBL - SINGLE BROKEN LINE
DBL - DOUBLE BROKEN LINE
DL - DOUBLE LINE-SOLID W/BROKEN
SB - STOP BAR

NOTE: ALL PAVEMENT MARKINGS ON NH ROUTE 33 AND GREENLAND ROAD SHALL BE ITEM 632.3110 RETROREFLECTIVE THERMOPLASTIC PAVE. MARKING 100mm LINE. EXCEPT WHERE NOTED.

10 0 10 20 30 40
SCALE IN METERS

METRIC

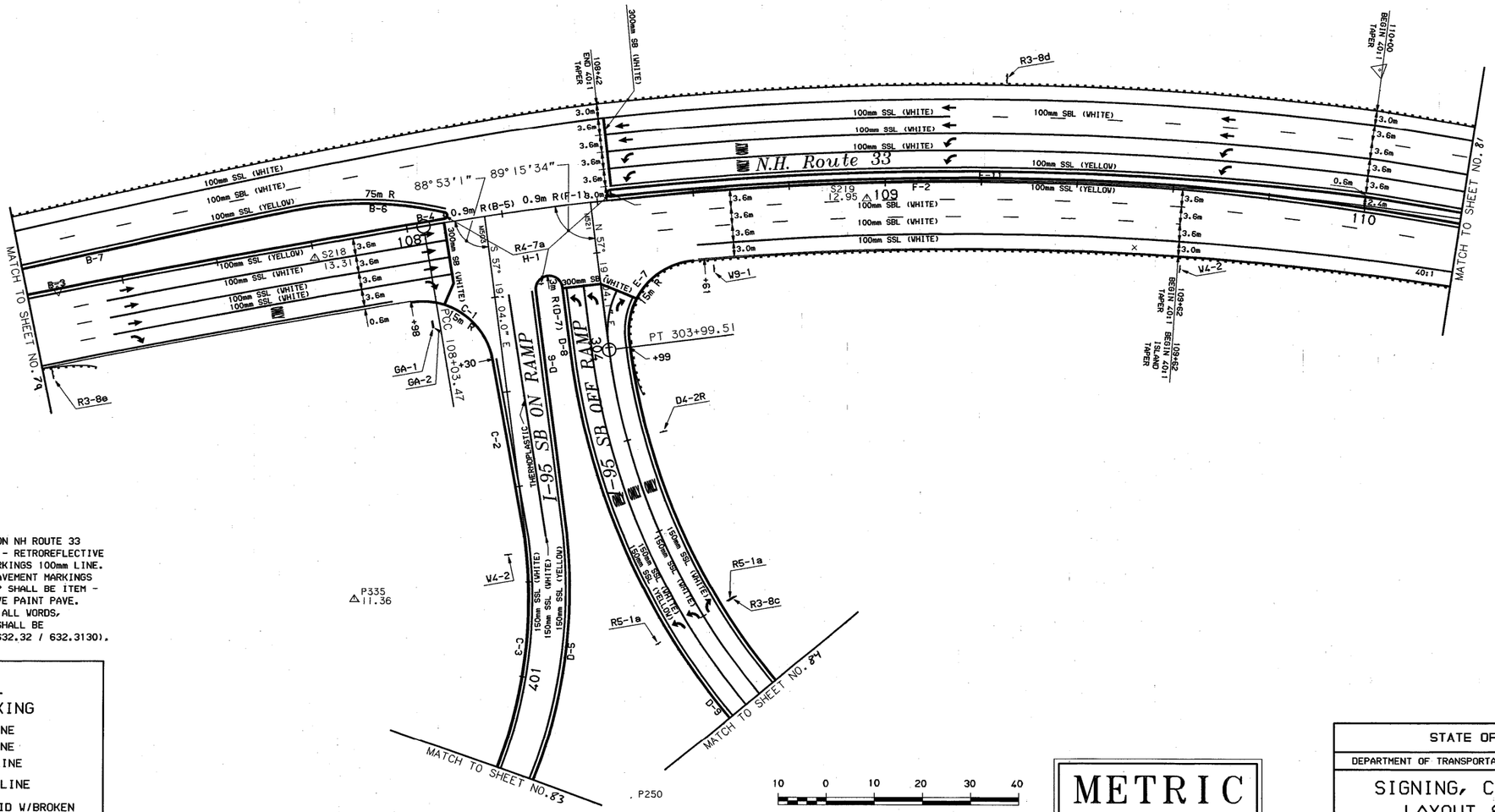
STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

SIGNING, CURBING, PAVEMENT LAYOUT & MARKING PLAN

MULTIPLOT NAME	*.FGB FILE NAME	DRAWING NAME	WINDOW NAME	SHEET SCALE
	ASSEMBLER	SHEET02	PVTSH02	1:500

FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
CM-5379(017)	12250	79	282

ROUTE 33 CURVE# 1	ROUTE 33 CURVE# 2	SB OFF RAMP CURVE# 1	SB ON RAMP CURVE# 1	SB ON RAMP CURVE# 2
PI=107+26.41	PI=110+04.99	PI=303+25.66	PI=400+93.78	PI=402+02.26
N = 62022.827	N = 62262.931	N = 62048.029	N = 62051.319	N = 61958.373
E =369662.640	E =369804.007	E =369831.010	E =369784.769	E =369842.162
△ =03° -32′ -00.2″ RIGHT	△ =32° -47′ -11.1″ RIGHT	△ =71° -22′ -41.3″ RIGHT	△ =25° -37′ -23.1″ RIGHT	△ =59° -56′ -23.1″ RIGHT
T = 77.111 m	T =201.518 m	T =100.560 m	T = 22.741 m	T = 86.497 m
R =2500.000 m	R =685.000 m	R =140.000 m	R =100.000 m	R =150.000 m
L =154.173 m	L =391.978 m	L =174.410 m	L = 44.721 m	L =156.922 m
E = 1.189 m	E =29.027 m	E =32.372 m	E = 2.553 m	E =23.153 m



NOTE: ALL PAVEMENT MARKINGS ON NH ROUTE 33 SHALL BE ITEM 632.3110 - RETROREFLECTIVE THERMOPLASTIC PAVE. MARKINGS 100mm LINE. EXCEPT WHERE NOTED. PAVEMENT MARKINGS ON I-95 ON AND OFF RAMP SHALL BE ITEM - 632.0015 RETROREFLECTIVE PAINT PAVE. MARKINGS, 150mm LINE. ALL WORDS, SYMBOLS AND STOP BARS SHALL BE THERMOPLASTIC (ITEM - 632.32 / 632.3130).

LEGEND

PAVEMENT MARKING

SSL	-	SINGLE SOLID LINE
DSL	-	DOUBLE SOLID LINE
SBL	-	SINGLE BROKEN LINE
DBL	-	DOUBLE BROKEN LINE
DL	-	DOUBLE LINE-SOLID W/BROKEN
SB	-	STOP BAR

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	DESCRIPTION

NOTEBOOKS

	BOOK	PAGE
	BOOK	PAGE
	BOOK	PAGE

	DATE
EXISTING DETAIL	
PROPOSED DESIGN	
SHEET CHECKED J. KIROUAC, A. KING	8/98
CADD PLOT E. RICHARDSON, J.HEBERT	8/98
AS BUILT DETAILS	

METRIC

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

SIGNING, CURBING, PAVEMENT LAYOUT & MARKING PLAN

MULTIPLOT NAME	*.FGB FILE NAME	DRAWING NAME	WINDOW NAME	SHEET SCALE	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
	ASSEMBLER	SHEET03	PVTSH03	1:500	CM-5379(017)	12250	80	282

REVISIONS AFTER PROPOSAL			
NUMBER	DATE	STATION	DESCRIPTION

NOTEBOOKS		
BOOK		PAGE
BOOK		PAGE
BOOK		PAGE

EXISTING DETAIL		DATE
PROPOSED DESIGN		DATE
SHEET CHECKED	J. KIROUAC, A. KING	DATE 8/98
CADD PLOT	E. RICHARDSON, J.HEBERT	DATE 8/98
AS BUILT DETAILS		DATE

ROUTE 33 CURVE# 2
PI=110+04.99
N = 62262.931
E =369804.007
△ =32° -47′ -11.1″ RIGHT
T =201.518 m
R =685.000 m
L =391.978 m
E =29.027 m

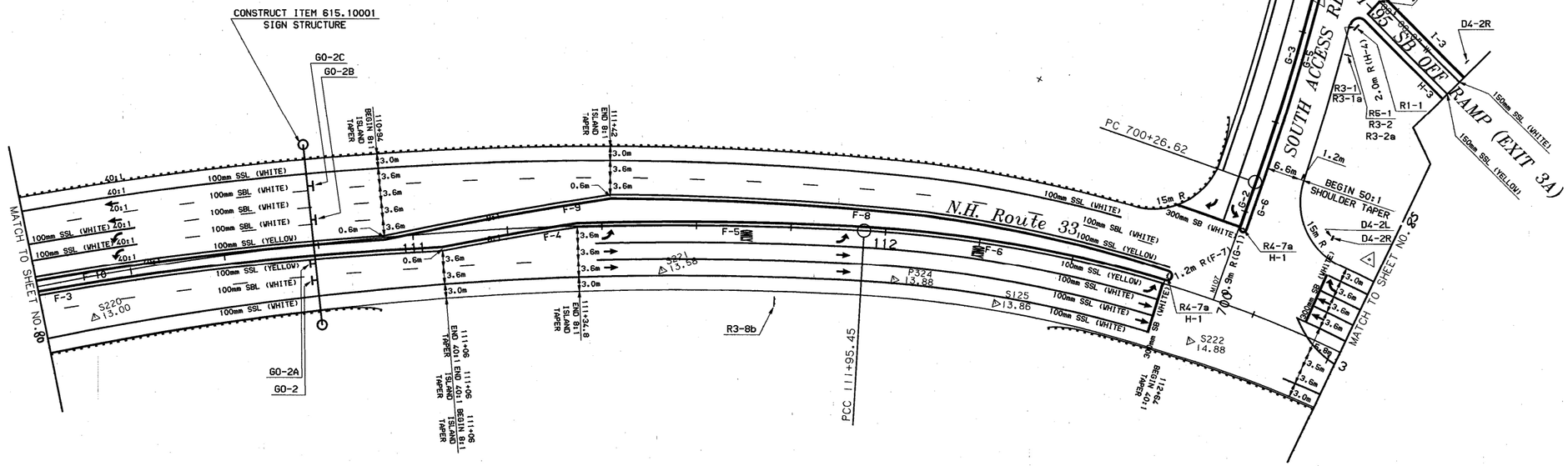
ROUTE 33 CURVE# 3
PI=113+02.45
N = 62401.674
E =370079.566
△ =43° -14′ -09.699″ RIGHT
T =106.999 m
R =270.000 m
L =203.745 m
E =20.429 m

SOUTH ACCESS CURVE # 2
PI=700+67.73
N = 62444.281
E =370042.822
△ =09° -24′ -04.2″ LEFT
T = 41.113 m
R =500.000 m
L = 82.041 m
E = 1.687 m

DRIVE CURVE # 2
PI= 5+36.75
N = 62341.058
E =370059.393
△ =100° - 18′ - 00.9″ RIGHT
T = 12.580 m
R = 10.500 m
L = 18.381 m
E = 5.886 m

DRIVE CURVE # 3
PI= 5+58.25
N = 62340.525
E =370031.118
△ =54° -56′ -11.4″ LEFT
T = 15.700 m
R = 30.200 m
L = 28.956 m
E = 3.837 m

GRID N



LEGEND

PAVEMENT MARKING

SSL - SINGLE SOLID LINE
DSL - DOUBLE SOLID LINE
SBL - SINGLE BROKEN LINE
DBL - DOUBLE BROKEN LINE
DL - DOUBLE LINE-SOLID W/BROKEN
SB - STOP BAR

NOTE: ALL PAVEMENT MARKINGS ON NH ROUTE 33, I-95 RAMP AND SOUTH ACCESS ROAD FROM FROM STA.700+00.0 TO STA. 701+20.0 SHALL BE ITEM 632.3110/632.3115 RETROREFLECTIVE THERMOPLASTIC PAVE. MARKINGS. EXCEPT WHERE NOTED. SEE THIS SHEET FOR LINE WIDTHS. PAVEMENT MARKINGS ON SOUTH ACCESS ROAD FROM STA. 701+20.0 TO STA. 710+30.0 SHALL BE ITEM 632.0110 RETROREFLECTIVE PAINT PAVE. MARKING 100mm LINE. ALL WORDS, SYMBOLS AND STOP BARS SHALL BE THERMOPLASTIC (ITEM - 632.32 / 632.3130).

10 0 10 20 30 40
SCALE IN METERS

METRIC

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

SIGNING, CURBING, PAVEMENT LAYOUT & MARKING PLAN

MULTIPLOT NAME	*.FGB FILE NAME	DRAWING NAME	WINDOW NAME	SHEET SCALE	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
	ASSEMBLER	SHEET04	PVTSH04	1:500	CM-5379(017)	12250	81	282

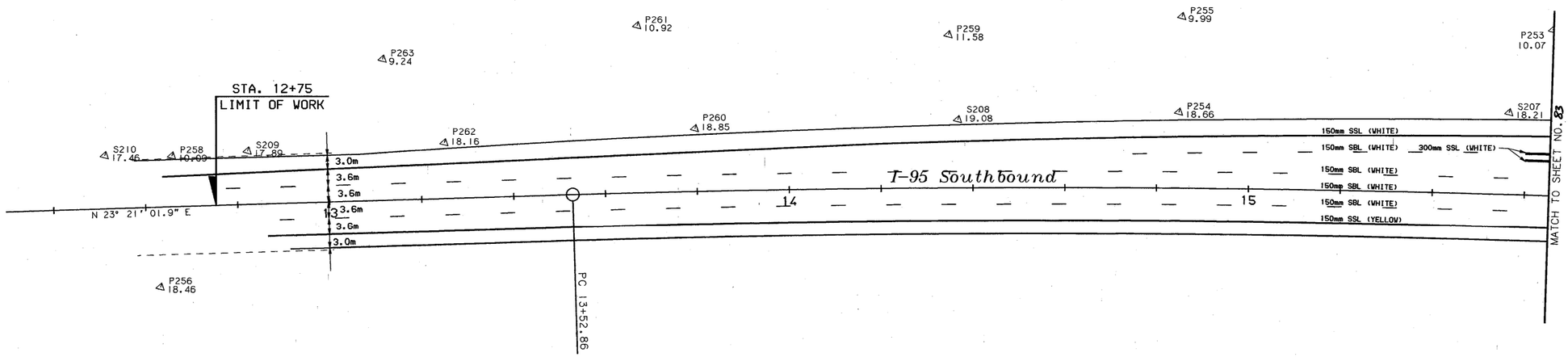
REVISIONS AFTER PROPOSAL			
NUMBER	DATE	STATION	DESCRIPTION

NOTEBOOKS		
BOOK	PAGE	
BOOK	PAGE	
BOOK	PAGE	

EXISTING DETAIL	DATE	
PROPOSED DESIGN	DATE	
SHEET CHECKED	J. KIROUAC, A. KING	DATE 8/98
CADD PLOT	E. RICHARDSON, J.HEBERT	DATE 8/98
AS BUILT DETAILS		DATE

CURVE # 2
PI= 15+88.88
N = 61747.127
E =369737.355
△ =07° -43' -53.2" RIGHT
T =236.012 m
R =3492.751 m
L =471.309 m
E = 7.965 m

GRID



LEGEND

PAVEMENT MARKING

SSL - SINGLE SOLID LINE
DSL - DOUBLE SOLID LINE
SBL - SINGLE BROKEN LINE
DBL - DOUBLE BROKEN LINE
DL - DOUBLE LINE-SOLID W/BROKEN
SB - STOP BAR

NOTE: ALL PAVEMENT MARKINGS ON I-95 SHALL BE ITEM 632.0115 RETROREFLECTIVE PAINT PAVE. MARKING, 150mm LINE. EXCEPT GORE MARKINGS SHALL BE ITEM - 632.3130 RETROREFLECTIVE THERMOPLASTIC PAVE. MARKING 300mm LINE.

10 0 10 20 30 40
SCALE IN METERS

METRIC

MULTIPLOT NAME	*.FGB FILE NAME	DRAWING NAME	WINDOW NAME	SHEET SCALE
	ASSEMBLER	SHEET05	PVTSH05	1:500

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

SIGNING, CURBING, PAVEMENT LAYOUT & MARKING PLAN

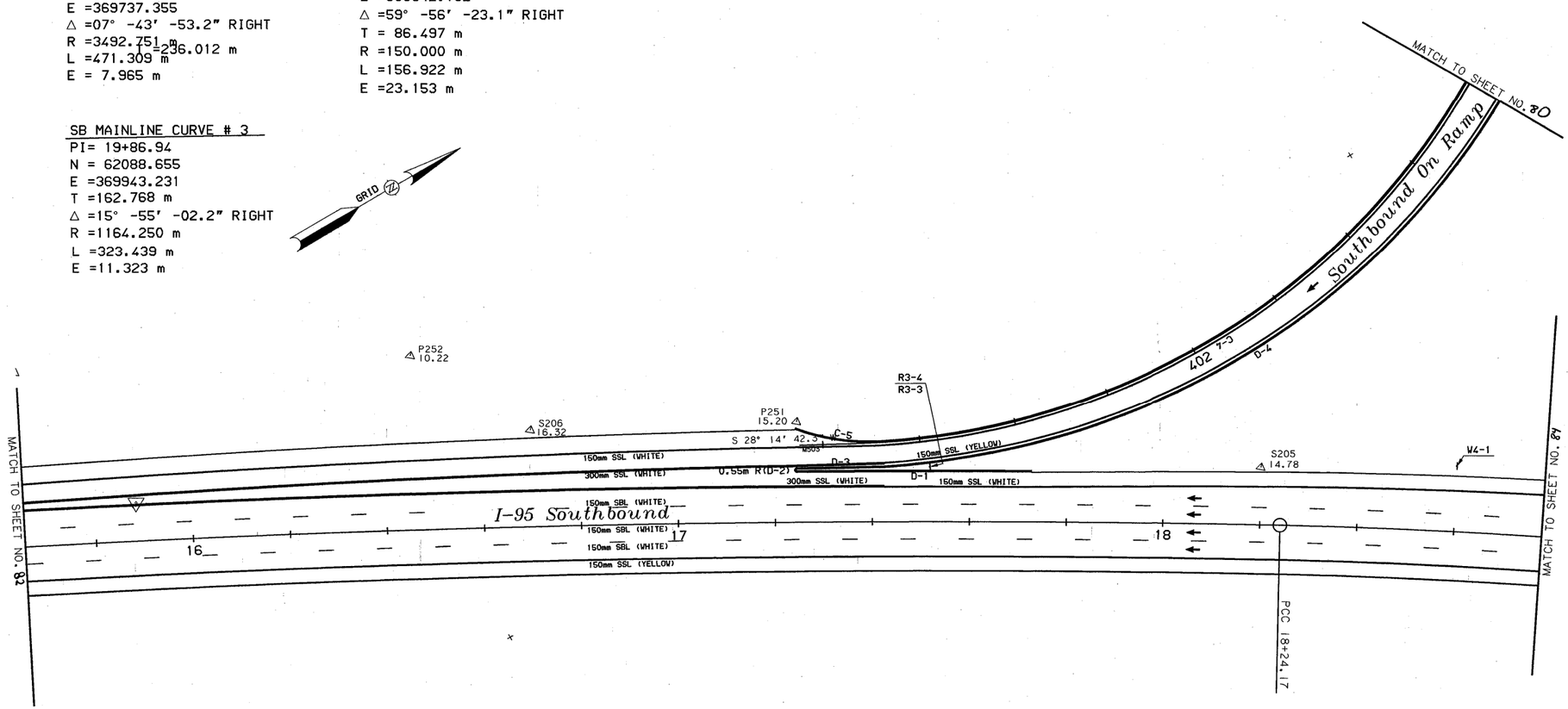
FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
CM-5379(017)	12250	82	282

SB MAINLINE CURVE # 2
PI= 15+88.88
N = 61747.127
E =369737.355
△ =07° -43′ -53.2″ RIGHT
R =3492.751 m
L =471.309 m
E = 7.965 m

SB MAINLINE CURVE # 3
PI= 19+86.94
N = 62088.655
E =369943.231
T =162.768 m
△ =15° -55′ -02.2″ RIGHT
R =1164.250 m
L =323.439 m
E =11.323 m

SB ON RAMP CURVE# 2
PI=402+02.26
N = 61958.373
E =369842.162
△ =59° -56′ -23.1″ RIGHT
T = 86.497 m
R =150.000 m
L =156.922 m
E =23.153 m

GRID N



LEGEND

PAVEMENT MARKING

SSL - SINGLE SOLID LINE
DSL - DOUBLE SOLID LINE
SBL - SINGLE BROKEN LINE
DBL - DOUBLE BROKEN LINE
DL - DOUBLE LINE-SOLID W/BROKEN
SB - STOP BAR

NOTE: ALL PAVEMENT MARKINGS ON I-95 AND I-95 ON RAMP SHALL BE ITEM 632.0115 RETROREFLECTIVE PAINT PAVE. MARKINGS, 150mm LINE. EXCEPT GORE MARKINGS SHALL BE ITEM - 632.3130 RETROREFLECTIVE THERMOPLASTIC PAVE. MARKING 300mm LINE.

10 0 10 20 30 40
SCALE IN METERS

METRIC

REVISIONS AFTER PROPOSAL

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	BOOK	PAGE

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SHEET CHECKED	J. KIROUAC, A. KING	DATE 8/98
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MULTIPLOT NAME	*.FGB FILE NAME	DRAWING NAME	WINDOW NAME	SHEET SCALE
	ASSEMBLER	SHEET06	PVTSH06	1:500

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

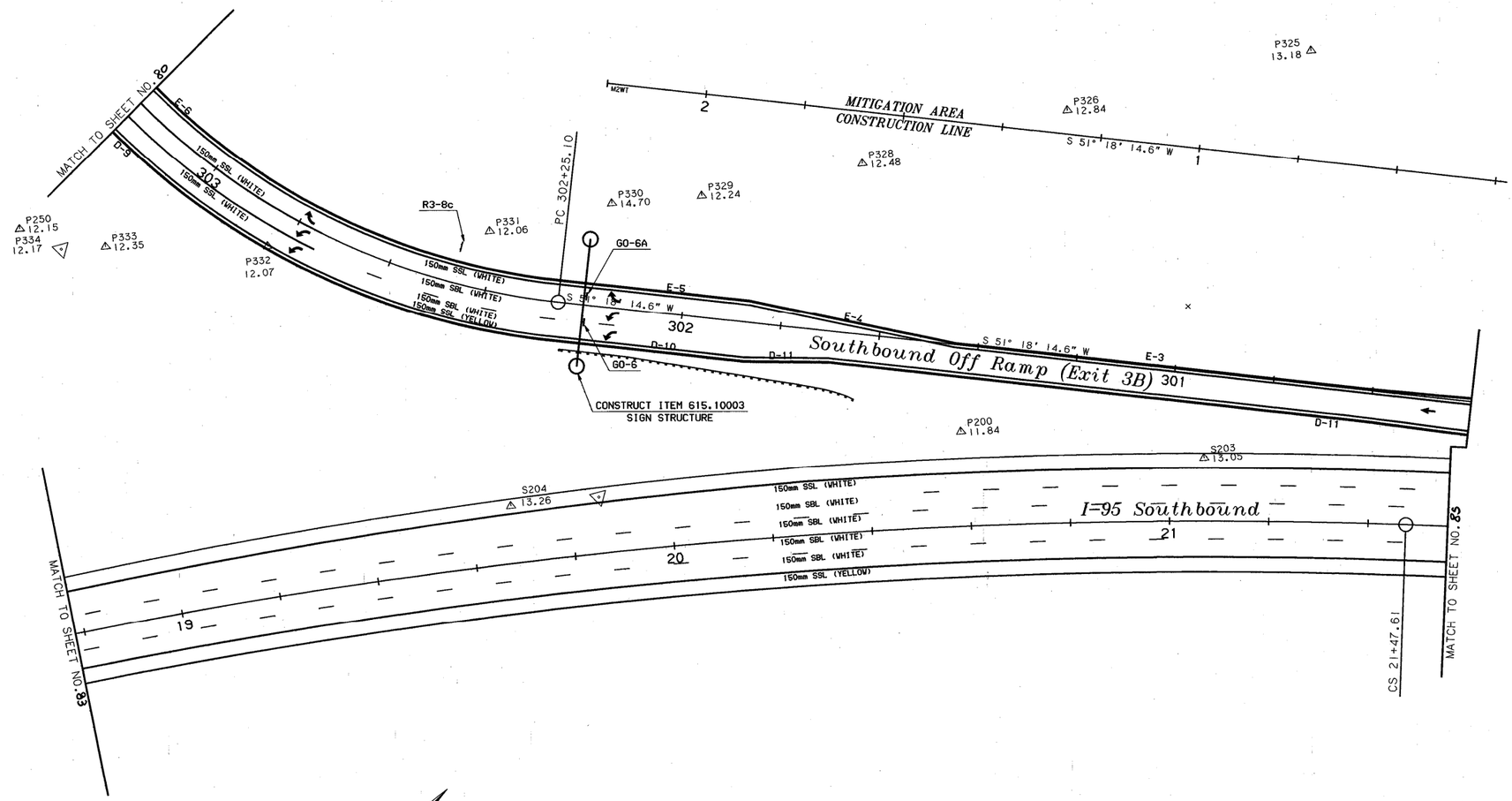
SIGNING, CURBING, PAVEMENT LAYOUT & MARKING PLAN

FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
CM-5379(017)	12250	83	282

SB OFF RAMP CURVE# 1
PI=303+25.66
N = 62048.029
E =369831.010
Δ =71° -22′ -41.3″ RIGHT
T =100.560 m
R =140.000 m
L =174.410 m
E =32.372 m

SB MAINLINE CURVE # 3
PI= 19+86.94
N = 62088.655
E =369943.231
Δ =15° -55′ -02.2″ RIGHT
T =162.768 m
R =1164.250 m
L =323.439 m
E =11.323 m

MITIGATION CONSTRUCTION LINE
45.0m OFFSET FROM SB OFF RAMP
(EXIT 3B) ALIGNMENT



LEGEND

PAVEMENT MARKING

SSL - SINGLE SOLID LINE
DSL - DOUBLE SOLID LINE
SBL - SINGLE BROKEN LINE
DBL - DOUBLE BROKEN LINE
DL - DOUBLE LINE-SOLID W/BROKEN
SB - STOP BAR

NOTE: ALL PAVEMENT MARKINGS ON I-95 AND I-95 OFF RAMP SHALL BE ITEM - 632.0115 RETROREFLECTIVE PAINT PAVE. MARKING, 150mm LINE. EXCEPT WORDS, SYMBOLS AND LANE LINES ON I-95 OFF RAMP SHALL BE THERMOPLASTIC (ITEM - 632.3115 / 632.32)

10 0 10 20 30 40
SCALE IN METERS

METRIC

MULTIPLOT NAME	*.FGB FILE NAME	DRAWING NAME	WINDOW NAME	SHEET SCALE
	ASSEMBLER	SHEET07	PVTSH07	1:500

REVISIONS AFTER PROPOSAL

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CADD PLOT	E. RICHARDSON, J.HEBERT	DATE 8/98
AS BUILT DETAILS		DATE

STATE OF NEW HAMPSHIRE
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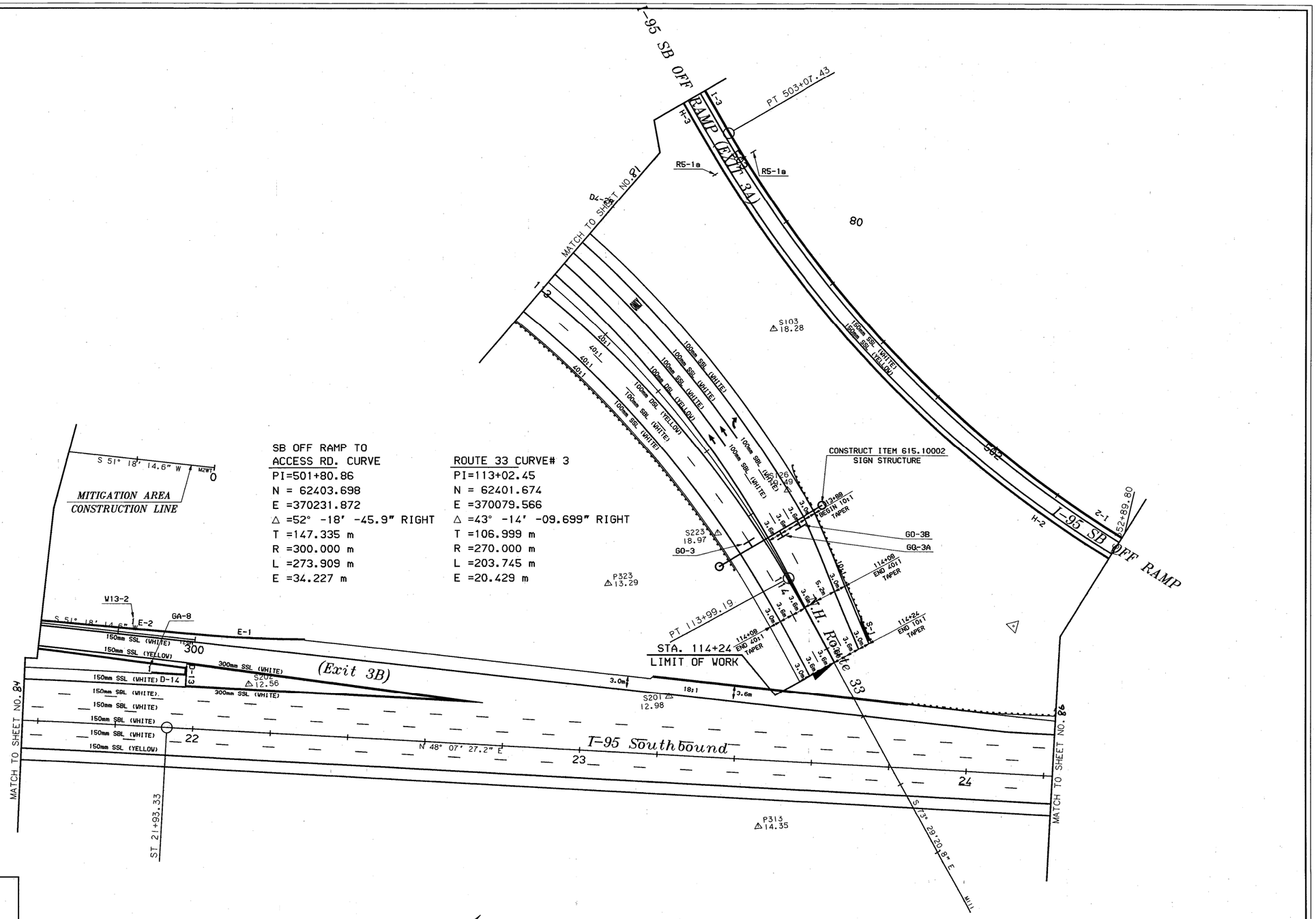
SIGNING, CURBING, PAVEMENT LAYOUT & MARKING PLAN

FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
CM-5379(017)	12250	84	282



SB OFF RAMP TO ACCESS RD. CURVE
PI=501+80.86
N = 62403.698
E =370231.872
△ =52° -18' -45.9" RIGHT
T =147.335 m
R =300.000 m
L =273.909 m
E =34.227 m

ROUTE 33 CURVE# 3
PI=113+02.45
N = 62401.674
E =370079.566
△ =43° -14' -09.699" RIGHT
T =106.999 m
R =270.000 m
L =203.745 m
E =20.429 m

LEGEND

PAVEMENT MARKING

- SSL - SINGLE SOLID LINE
- DSL - DOUBLE SOLID LINE
- SBL - SINGLE BROKEN LINE
- DBL - DOUBLE BROKEN LINE
- DL - DOUBLE LINE-SOLID W/BROKEN
- SB - STOP BAR

NOTE: ALL PAVEMENT MARKINGS ON I-95 AND I-95 OFF RAMPS SHALL BE ITEM - 632.0115 RETROREFLECTIVE PAINT PAVE. MARKING, 150mm LINE. EXCEPT GORE LINES, WORDS, SYMBOLS AND OFF RAMP LANE LINES SHALL BE THERMOPLASTIC (ITEM - 632.3130/632.32/632.3115) ALL PAVEMENT MARKINGS ON NH ROUTE 33 SHALL BE ITEM 632.3110 RETROREFLECTIVE THERMOPLASTIC PAVE. MARKING, 100mm LINE. EXCEPT WHERE NOTED.

GRID N

10 0 10 20 30 40
SCALE IN METERS

METRIC

REVISIONS AFTER PROPOSAL

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STATE OF NEW HAMPSHIRE
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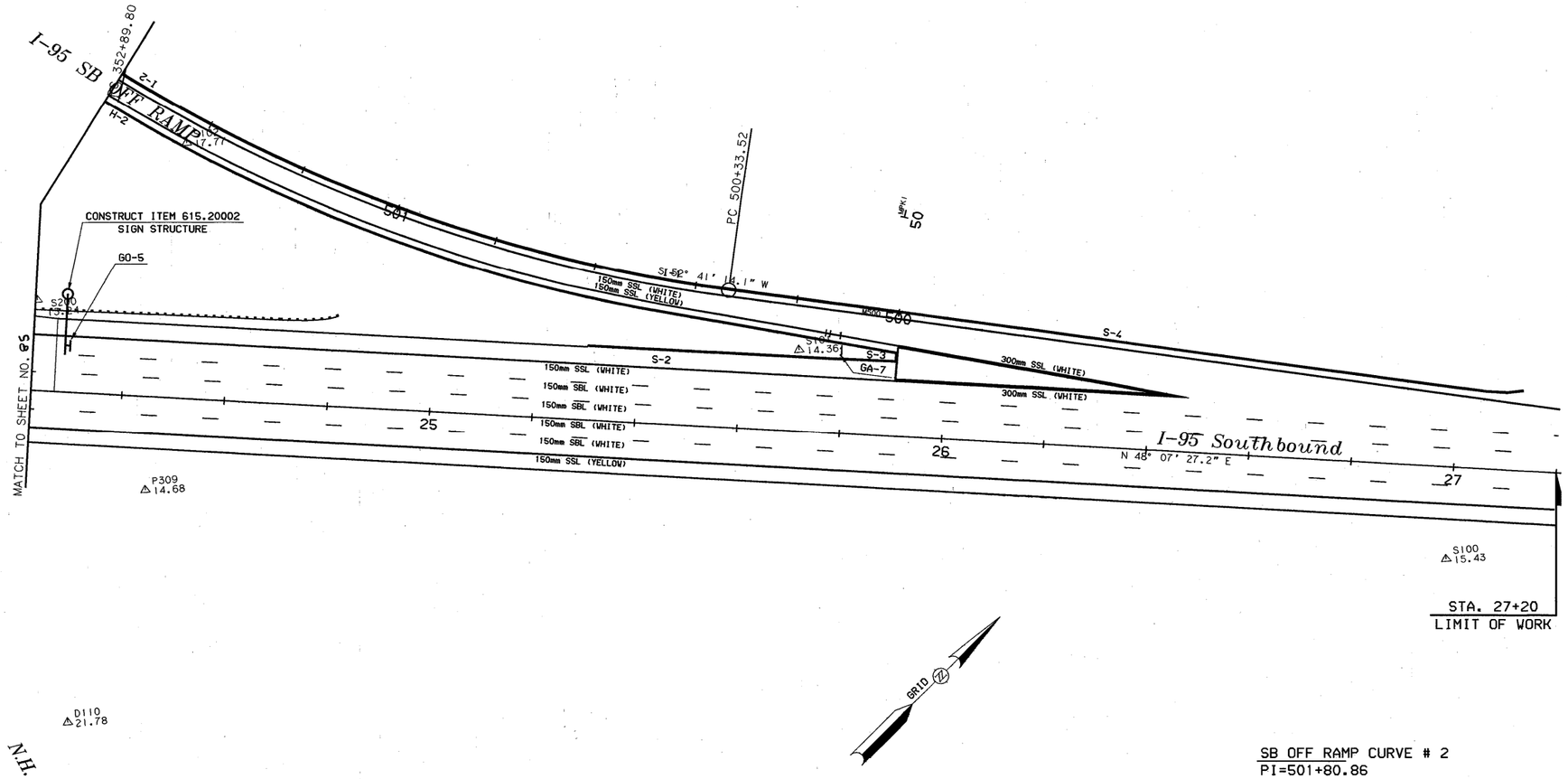
SIGNING, CURBING, PAVEMENT LAYOUT & MARKING PLAN

MULTIPLOT NAME	*.FGB FILE NAME	DRAWING NAME	WINDOW NAME	SHEET SCALE	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
	ASSEMBLER	SHEET08	PVTSH08	1:500	CM-5379(017)	12250	85	282



SB OFF RAMP CURVE # 2
PI=501+80.86
N = 62403.698
E =370231.872
Δ =52° -18' -45.9" RIGHT
T =147.335 m
R =300.000 m
L =273.909 m
E =34.227 m

LEGEND

PAVEMENT MARKING

SSL	-	SINGLE SOLID LINE
DSL	-	DOUBLE SOLID LINE
SBL	-	SINGLE BROKEN LINE
DBL	-	DOUBLE BROKEN LINE
DL	-	DOUBLE LINE-SOLID W/BROKEN
SB	-	STOP BAR

NOTE: ALL PAVEMENT MARKINGS ON I-95 AND I-95 EXIT 3A OFF RAMP SHALL BE ITEM 632.0115 RETROREFLECTIVE PAINT PAVE. MARKING, 150mm LINE.
GORE AREA AT EXIT 3A OFF RAMP SHALL BE ITEM 632.3115 RETROREFLECTIVE THERMOPLASTIC PAVE. MARKING, 150mm LINE.
EXCEPT WHERE NOTED. SEE DETAILS.

10 0 10 20 30 40
SCALE IN METERS

METRIC

REVISIONS AFTER PROPOSAL

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SHEET CHECKED	J. KIROUAC, A. KING	DATE 8/98
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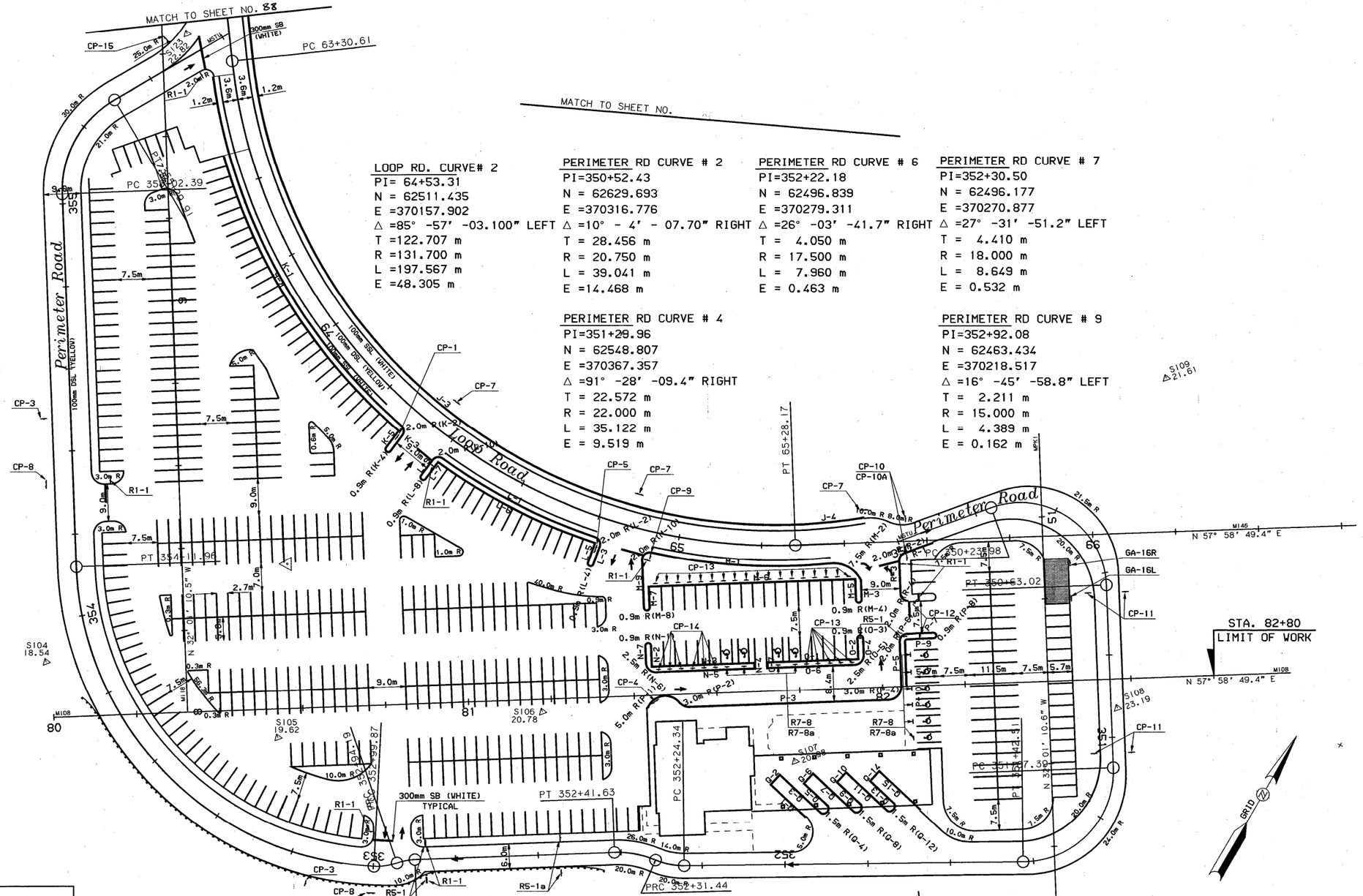
STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

SIGNING, CURBING, PAVEMENT LAYOUT & MARKING PLAN

MULTIPLOT NAME	*.FGB FILE NAME	DRAWING NAME	WINDOW NAME	SHEET SCALE	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
	ASSEMBLER	SHEET09	PVTSH09	1:500	CM-5379(017)	12250	86	282



LOOP RD. CURVE# 2
PI= 64+53.31
N = 62511.435
E =370157.902
△ =85° -57′ -03.100″ LEFT
T =122.707 m
R =131.700 m
L =197.567 m
E =48.305 m

PERIMETER RD CURVE # 2
PI=350+52.43
N = 62629.693
E =370316.776
△ =10° - 4′ - 07.70″ RIGHT
T = 28.456 m
R = 20.750 m
L = 39.041 m
E =14.468 m

PERIMETER RD CURVE # 6
PI=352+22.18
N = 62496.839
E =370279.311
△ =26° -03′ -41.7″ RIGHT
T = 4.050 m
R = 17.500 m
L = 7.960 m
E = 0.463 m

PERIMETER RD CURVE # 7
PI=352+30.50
N = 62496.177
E =370270.877
△ =27° -31′ -51.2″ LEFT
T = 4.410 m
R = 18.000 m
L = 8.649 m
E = 0.532 m

PERIMETER RD CURVE # 4
PI=351+29.96
N = 62548.807
E =370367.357
△ =91° -28′ -09.4″ RIGHT
T = 22.572 m
R = 22.000 m
L = 35.122 m
E = 9.519 m

PERIMETER RD CURVE # 9
PI=352+92.08
N = 62463.434
E =370218.517
△ =16° -45′ -58.8″ LEFT
T = 2.211 m
R = 15.000 m
L = 4.389 m
E = 0.162 m

S104 18.54 △
S105 19.62 △
S106 20.78 △
S107 △20°98
S108 23.19 △
S109 △21.61

NOTE: ALL PAVEMENT MARKINGS AT PARK AND RIDE, PERIMETER ROAD AND LOOP ROAD SHALL BE ITEM 632.3110 RETROREFLECTIVE THERMOPLASTIC PAVE. MARKING 100mm LINE. ALL WORDS, SYMBOLS AND STOP BARS SHALL BE THERMOPLASTIC (ITEM - 632.32 / 632.3130)

LEGEND

PAVEMENT MARKING

SSL - SINGLE SOLID LINE
DSL - DOUBLE SOLID LINE
SBL - SINGLE BROKEN LINE
DBL - DOUBLE BROKEN LINE
DL - DOUBLE LINE-SOLID W/BROKEN
SB - STOP BAR

10 0 10 20 30 40
SCALE IN METERS

METRIC

REVISIONS AFTER PROPOSAL

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SHEET CHECKED	J. KIROUAC, A. KING	DATE	8/98
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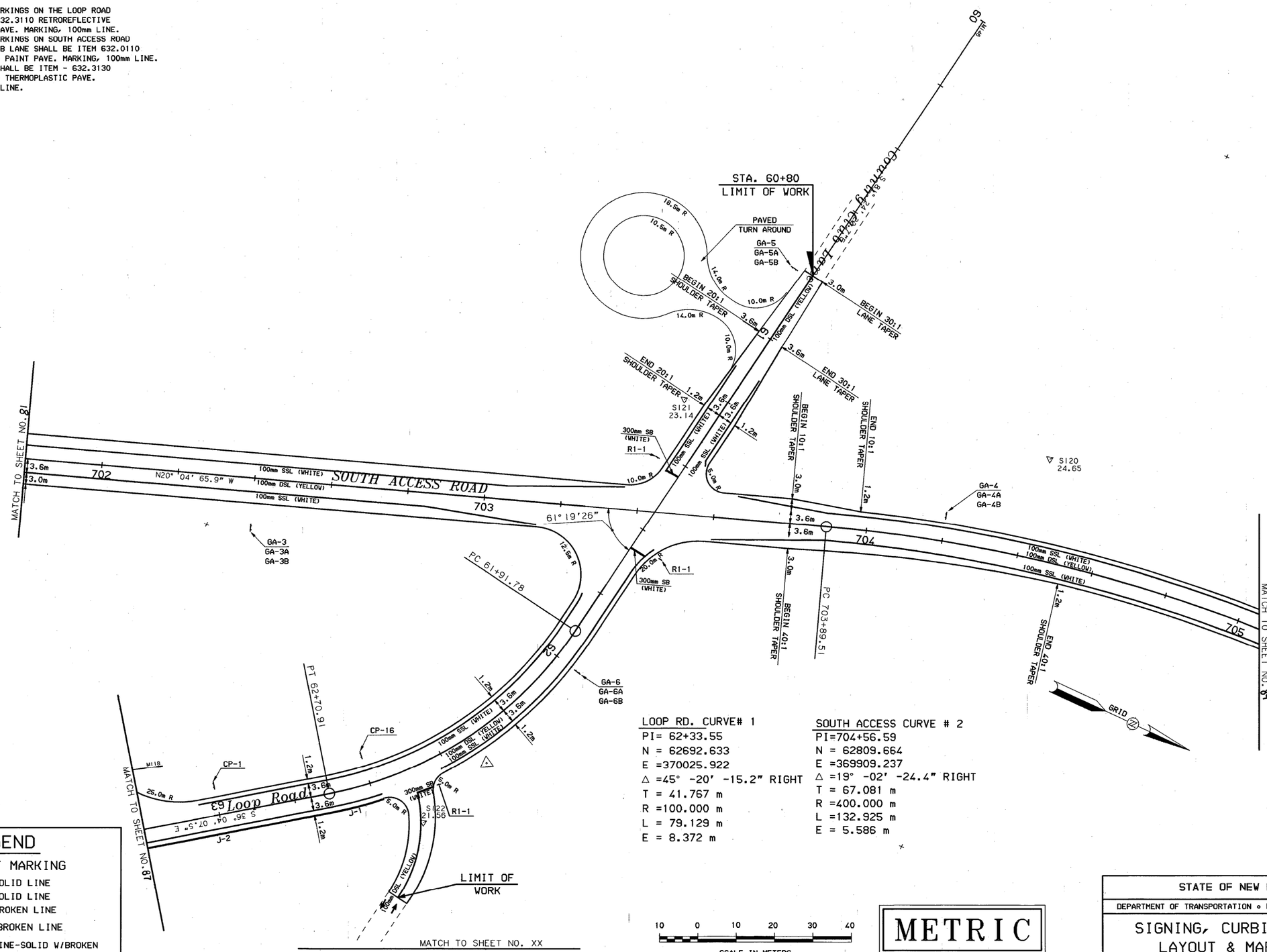
STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF HIGHWAY DESIGN

SIGNING, CURBING, PAVEMENT LAYOUT & MARKING PLAN

MULTIPLOT NAME	*.FGB FILE NAME	DRAWING NAME	WINDOW NAME	SHEET SCALE	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
	ASSEMBLER	SHEET10	PVTSH10	1:500	CM-5379(017)	12250	87	282

NOTE: ALL PAVEMENT MARKINGS ON THE LOOP ROAD SHALL BE ITEM 632.3110 RETROREFLECTIVE THERMOPLASTIC PAVE. MARKING, 100mm LINE. ALL PAVEMENT MARKINGS ON SOUTH ACCESS ROAD AND COUNTRY CLUB LANE SHALL BE ITEM 632.0110 RETROREFLECTIVE PAINT PAVE. MARKING, 100mm LINE. ALL STOP BARS SHALL BE ITEM - 632.3130 RETROREFLECTIVE THERMOPLASTIC PAVE. MARKING, 300mm LINE.



LEGEND

PAVEMENT MARKING

- SSL - SINGLE SOLID LINE
- DSL - DOUBLE SOLID LINE
- SBL - SINGLE BROKEN LINE
- DBL - DOUBLE BROKEN LINE
- DL - DOUBLE LINE-SOLID W/BROKEN
- SB - STOP BAR

LOOP RD. CURVE# 1
PI= 62+33.55
N = 62692.633
E =370025.922
Δ =45° -20' -15.2" RIGHT
T = 41.767 m
R =100.000 m
L = 79.129 m
E = 8.372 m

SOUTH ACCESS CURVE # 2
PI=704+56.59
N = 62809.664
E =369909.237
Δ =19° -02' -24.4" RIGHT
T = 67.081 m
R =400.000 m
L =132.925 m
E = 5.586 m

10 0 10 20 30 40
SCALE IN METERS

METRIC

REVISIONS AFTER PROPOSAL

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NOTEBOOKS

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BOOK		PAGE

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SHEET CHECKED	J. KIROUAC, A. KING	DATE 8/98
CADD PLOT	E. RICHARDSON, J.HEBERT	DATE 8/98
AS BUILT DETAILS		DATE

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

SIGNING, CURBING, PAVEMENT LAYOUT & MARKING PLAN

MULTIPLOT NAME	*.FGB FILE NAME	DRAWING NAME	WINDOW NAME	SHEET SCALE	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
	ASSEMBLER	SHEET11	PVTSH11	1:500	CM-5379(017)	12250	88	232

REVISIONS AFTER PROPOSAL			
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CADD PLOT E. RICHARDSON, J.HEBERT	DATE 8/98
AS BUILT DETAILS	DATE

MATCH TO SHEET NO. 88

PT 704+22.43

S119
25.40

SOUTH ACCESS ROAD

N 01° 02' 32.5" W

706

100mm SSL (WHITE)
100mm DSL (YELLOW)
100mm SSL (WHITE)

S118
24.70

707

MATCH TO SHEET NO. 90

SOUTH ACCESS CURVE # 2
PI=704+56.59
N = 62809.664
E =369909.237
△ =19° -02' -24.4" RIGHT
T = 67.081 m
R =400.000 m
L =132.925 m
E = 5.586 m

S116
28.79

S115
23.80

GRID N

S114
22.58

LEGEND

PAVEMENT MARKING

SSL - SINGLE SOLID LINE
DSL - DOUBLE SOLID LINE
SBL - SINGLE BROKEN LINE
DBL - DOUBLE BROKEN LINE
DL - DOUBLE LINE-SOLID W/BROKEN
SB - STOP BAR

NOTE: ALL PAVEMENT MARKINGS ON SOUTH ACCESS ROAD SHALL BE ITEM 632.0110 RETROREFLECTIVE PAINT PAVE. MARKING, 100mm LINE. EXCEPT WHERE NOTED.

10 0 10 20 30 40
SCALE IN METERS

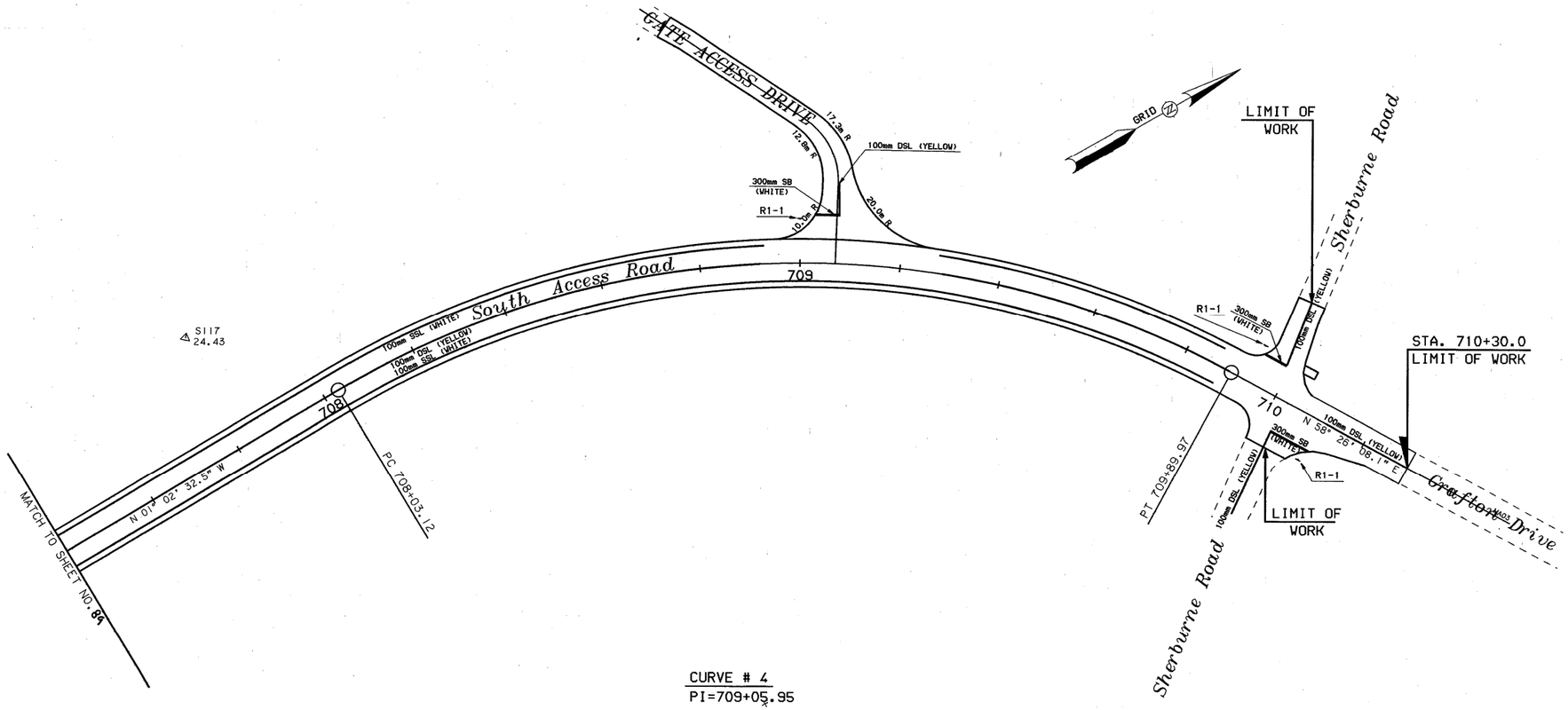
METRIC

MULTIPLOT NAME	*.FGB FILE NAME	DRAWING NAME	WINDOW NAME	SHEET SCALE
	ASSEMBLER	SHEET13	PVTSH13	1:500

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

SIGNING, CURBING, PAVEMENT LAYOUT & MARKING PLAN

FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
CM-5379(017)	12250	89	282



CURVE # 4
PI=709+05.95
N = 63260.192
E =369901.040
△ =59° -28' -40.5" RIGHT
T =102.832 m
R =180.000 m
L =186.855 m
E =27.303 m

REVISIONS AFTER PROPOSAL

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AS BUILT DETAILS		DATE

LEGEND

PAVEMENT MARKING

- SSL - SINGLE SOLID LINE
- DSL - DOUBLE SOLID LINE
- SBL - SINGLE BROKEN LINE
- DBL - DOUBLE BROKEN LINE
- DL - DOUBLE LINE-SOLID W/BROKEN
- SB - STOP BAR

NOTE: ALL PAVEMENT MARKINGS ON SOUTH ACCESS ROAD AND GRAFTON DRIVE SHALL BE ITEM 632.0110 RETROREFLECTIVE PAINT PAVE. MARKING, 100mm LINE. ALL STOP BARS SHALL BE ITEM - 632.3130 RETROREFLECTIVE THERMOPLASTIC PAVE. MARKING, 300mm LINE.

10 0 10 20 30 40
SCALE IN METERS

METRIC

MULTIPLOT NAME	*.FGB FILE NAME	DRAWING NAME	WINDOW NAME	SHEET SCALE
	ASSEMBLER	SHEET14	PVTSH14	1:500

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

SIGNING, CURBING, PAVEMENT LAYOUT & MARKING PLAN

FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
CM-5379(017)	12250	90	282

REVISIONS AFTER PROPOSAL

NUMBER	DESCRIPTION	STATION	STATION	DATE

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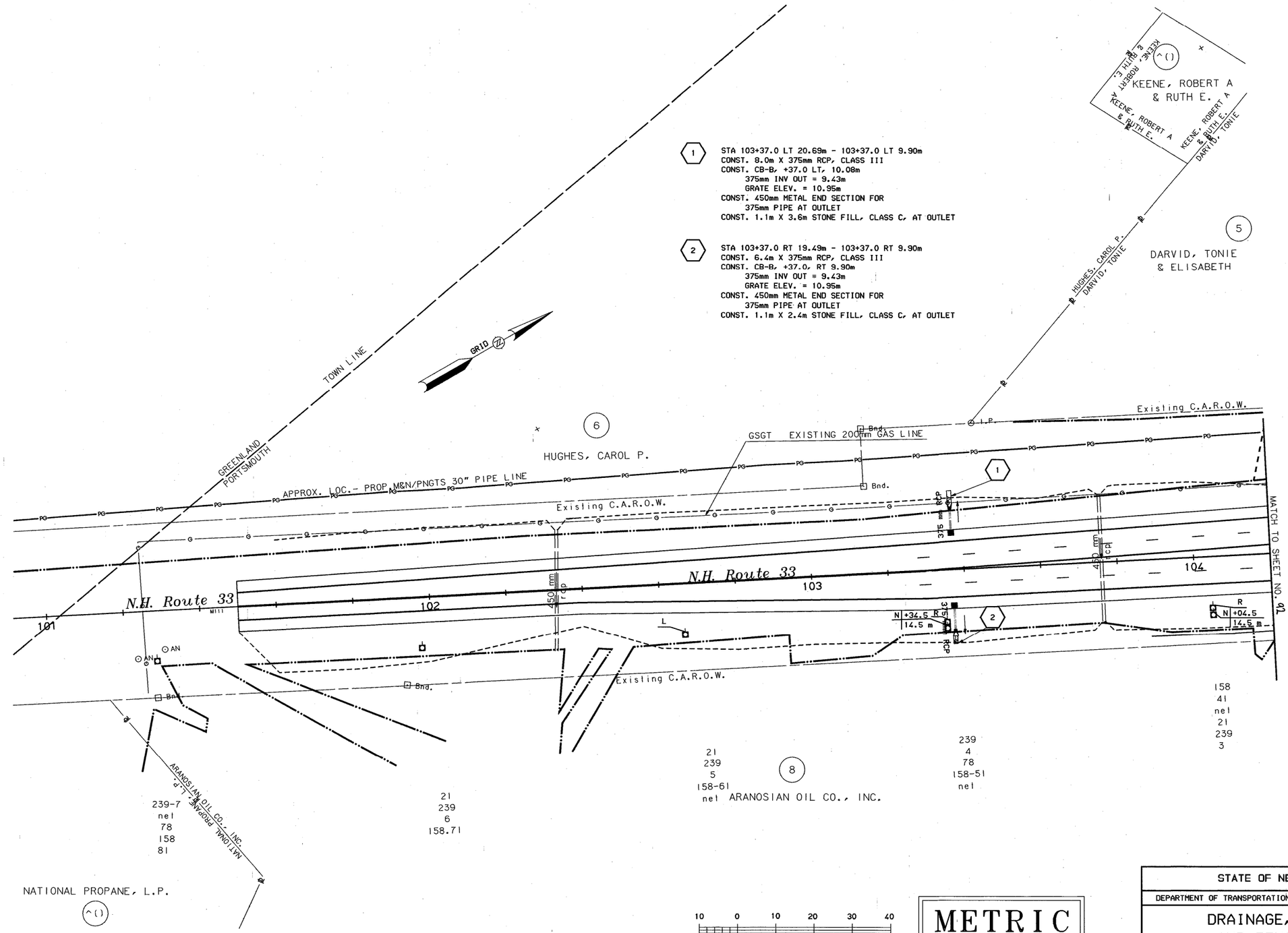
AS BUILT DETAILS		DATE

(1) STA 103+37.0 LT 20.69m - 103+37.0 LT 9.90m
CONST. 8.0m X 375mm RCP, CLASS III
CONST. CB-B, +37.0 LT, 10.08m
375mm INV OUT = 9.43m
GRATE ELEV. = 10.95m
CONST. 450mm METAL END SECTION FOR
375mm PIPE AT OUTLET
CONST. 1.1m X 3.6m STONE FILL, CLASS C, AT OUTLET

(2) STA 103+37.0 RT 19.49m - 103+37.0 RT 9.90m
CONST. 6.4m X 375mm RCP, CLASS III
CONST. CB-B, +37.0, RT 9.90m
375mm INV OUT = 9.43m
GRATE ELEV. = 10.95m
CONST. 450mm METAL END SECTION FOR
375mm PIPE AT OUTLET
CONST. 1.1m X 2.4m STONE FILL, CLASS C, AT OUTLET



10 0 10 20 30 40
SCALE IN METERS

METRIC

MULTIPLOT NAME	*.FGB FILE NAME	DRAWING NAME	WINDOW NAME	SHEET SCALE
DRNSH01	ASSEMBLER	SHEET01	DRNSH01	1:500

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN
DRAINAGE, GUARDRAIL AND FENCING PLANS

FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
CM-5379(017)	12250	91	282

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EXISTING DETAIL		DATE
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SHEET CHECKED	J. KIROUAC, A. KING	DATE 8/98
CADD PLOT	E. RICHARDSON, J.HEBERT	DATE 8/98
AS BUILT DETAILS		DATE

(3) STA 105+14.7 RT 20.06m - 105+53.2 RT 14.60m
CONST. 21.0m X 375mm RCP, CLASS III
CONST. CB-B, +53.2, RT 14.60m
375mm INV OUT = 10.61m
375mm INV IN = 10.69m
GRATE ELEV. = 12.30m
CONST. 450mm METAL END SECTION FOR
375mm PIPE AT OUTLET
CONST. 1.1m X 16.0m STONE FILL, CLASS C, AT OUTLET
REMOVE EXIST. CB, +53 RT 14.60m (SUBSID. TO 203.1)
REMOVE EXIST. 375mm RCP, FROM +45 TO +53
(SUBSID. TO 203.1)
PLUG AND ABANDON EXIST. 375mm RCP
FROM +28 TO +45

(4) STA 105+53.2 RT 14.60m - 105+94.0 LT 0.30m
CONST. 43.3m X 375mm RCP, CLASS III
CONST. CB-B, +94.0, LT 0.30m
375mm INV OUT = 11.42m
375mm INV IN = 11.49m
GRATE ELEV. = 13.10m

(5) STA 105+94.0 LT 0.30m - 105+93.8 LT 2.00m
CONST. 1.0m X 375mm RCP, CLASS III
CONST. CB-B, +93.8, LT 2.00m
375mm INV OUT = 11.52m
375mm INV IN = 11.59m
GRATE ELEV. = 13.15m

(6) STA 105+93.8 LT 2.00m - 106+54.6 LT 2.79m
CONST. 60.8m X 375mm RCP, CLASS III
CONST. CB-B, +54.6, LT 2.79m
375mm INV OUT = 12.13m
GRATE ELEV. = 13.70m

(92) STA 450+31.6 LT 28.30m - 450+33.0 RT 0.30m
CONST. 27.1m X 375mm RCP, CLASS III
CONST. CB-B, +33.0, RT 0.30m
375mm INV OUT = 10.01m
375mm INV IN = 10.09m
GRATE ELEV. = 12.00m
CONST. 450mm METAL END SECTION FOR
375mm PIPE AT OUTLET
CONST. 1.1m X 3.5m STONE FILL, CLASS C, AT OUTLET
REMOVE EXISTING 375mm RCP, FROM LT 28.0m TO LT 19.5m
(SUBSID. TO ITEM 603.00204)
PLUG AND ABANDON EXISTING 375mm RCP, FROM LT 19.5m
TO LT 3.7m (SUBSID. TO ITEM 203.1)
WRECK AND FILL EXIST. CB, STA 450+28.2 LT 3.6m
(SUBSID. TO ITEM 203.1)

(93) STA 450+33.0 RT 7.61m - 450+33.0 RT 0.30m
CONST 6.4m X 375mm RCP, CLASS III
CONST. CB-E, +33.0, RT 7.6m
375mm INV OUT = 10.11m
300mm INV IN = 10.19m
300mm INV IN = 10.19m
GRATE ELEV. = 12.18m

(94) STA 450+24.0 RT 17.40m - 450+33.0 RT 7.60m
CONST. 13.8m X 300mm RCP, CLASS III
CONST. CB-E, +24.0, RT 17.40m
300mm RCP INV OUT = 10.24m
150mm UND INV IN = 10.32m
GRATE ELEV. = 11.80m

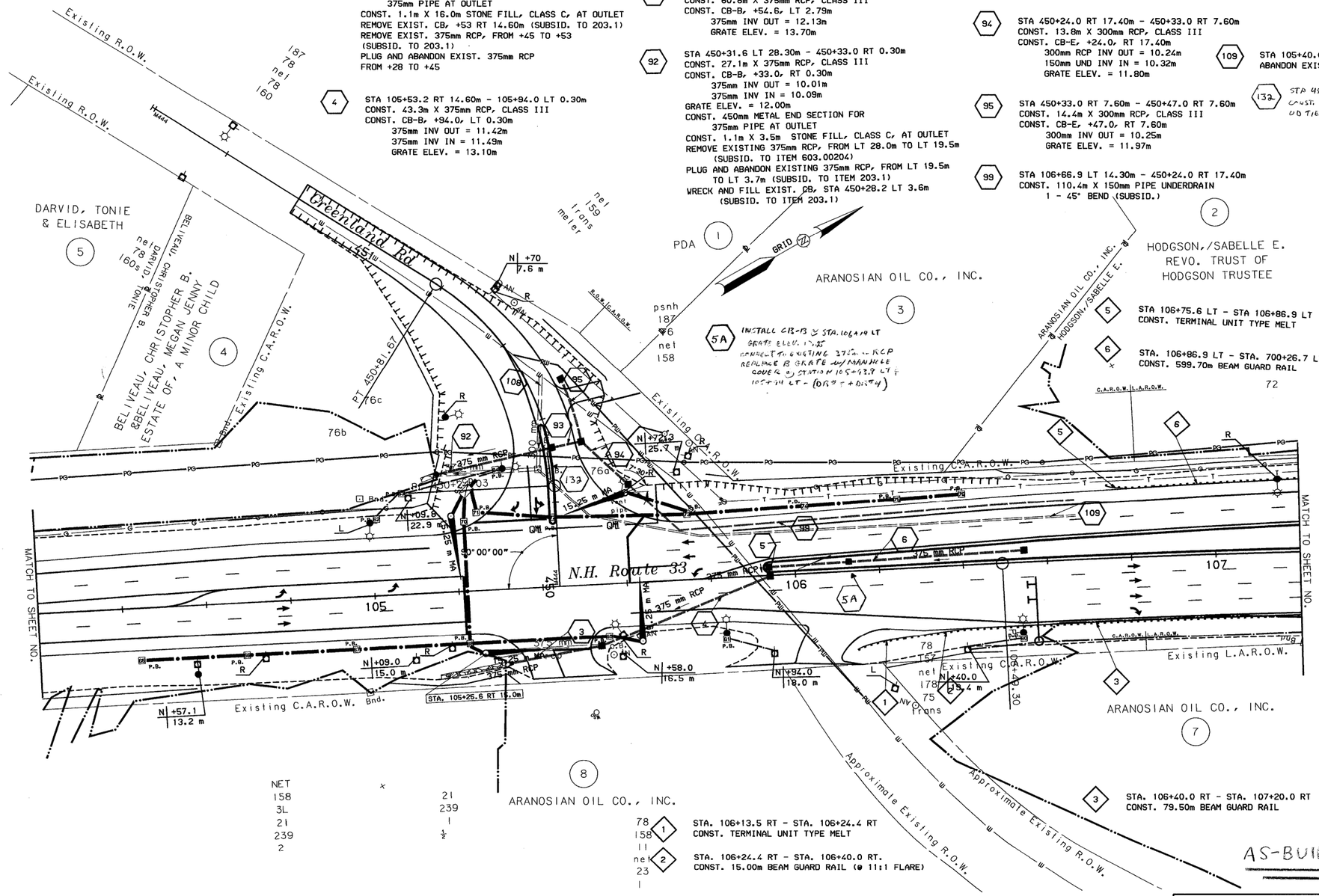
(95) STA 450+33.0 RT 7.60m - 450+47.0 RT 7.60m
CONST. 14.4m X 300mm RCP, CLASS III
CONST. CB-E, +47.0, RT 7.60m
300mm INV OUT = 10.25m
GRATE ELEV. = 11.97m

(99) STA 106+66.9 LT 14.30m - 450+24.0 RT 17.40m
CONST. 110.4m X 150mm PIPE UNDERDRAIN
1 - 45° BEND (SUBSID.)

(108) STA 450+28.2 LT 3.50m - 450+49.5 RT 3.70m
REMOVE 22.3m EXISTING 300mm RCP

(109) STA 105+40.0 LT 28.10m - 106+67.1 LT 10.50m
ABANDON EXISTING UNDERDRAIN

(132) STA 450+37 LT 3m - 450+26.5 LT 3m
CONST. 6.10 UD
UD TIED INTO CB #92



AS-BUILT PLANS

10 0 10 20 30 40
SCALE IN METERS

METRIC

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

DRAINAGE, GUARDRAIL AND FENCING PLANS

MULTIPLOT NAME	*.FGB FILE NAME	DRAWING NAME	WINDOW NAME	SHEET SCALE
DRNSH02.DAT	ASSEMBLER	SHEET02	DRNSH02	1:500

FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
CM-5379(017)	12250	92	282

7 STA 107+82.8 RT 40.79m - 107+97.8 LT 3.08m
CONST. 40.0m X 375mm RCP, CLASS III
CONST. CB-B, +97.8, LT 3.08m
375mm INV OUT = 11.73m
375mm INV IN = 11.80m
375mm INV IN = 11.80m
GRATE ELEV. = 13.75m
CONST. 450mm METAL END SECTION FOR
375mm PIPE AT OUTLET
CONST. 1.1m X 3.5m STONE FILL, CLASS C, AT OUTLET

8 STA 107+97.8 LT 3.08m - 107+80.5 LT 8.46m
CONST. 18.0m X 375mm RCP, CLASS III
CONST. CB-B, +80.5, LT 8.46m
375mm INV OUT = 12.19m
GRATE ELEV. = 13.80m

9 STA 107+97.8 LT 3.08m - 108+08.6 LT 2.80m
CONST. 10.5m X 375mm RCP, CLASS III
CONST. CB-B, +08.6, LT 2.80m
375mm INV OUT = 11.95m
GRATE ELEV. = 13.55mm

10 STA 109+38.2 RT 21.36m - 109+43.5 RT 13.42m
CONST. 5.0m X 600mm RCP, CLASS III
CONST CB-B, +43.5, RT 13.42m
600mm INV OUT = 10.22m
600mm INV IN = 10.29m
150mm INV IN = 10.95m
GRATE ELEV. = 12.75m
CONST. 750mm METAL END SECTION FOR
600mm PIPE AT OUTLET
CONST. 1.4m X 3.2m STONE FILL, CLASS B, AT OUTLET
INV AT OUTLET = 10.14

11 STA 109+43.5 RT 13.42m - 109+43.8 LT 2.70m
CONST. 16.1m X 600mm RCP, CLASS III
CONST. 1.5m DIA. CB-B, +43.8, LT 2.70m
600mm INV OUT = 10.43m
450mm INV IN = 10.50m
375mm INV IN = 11.24m
GRATE ELEV. 13.30m

11A STA 109+43.8 LT 2.70m - 109+40.0 LT 1.50m
CONST. 2.8m X 375mm RCP, CLASS III
CONST. CB-B, +40.0, LT 1.50m
375mm INV OUT = 11.35
375mm INV IN = 11.42
GRATE ELEV. = 13.41

12 STA 109+40.0 LT 1.50m - 109+18.0 LT 2.70m
CONST. 22.1m X 375mm RCP, CLASS III
CONST. CB-B, +18.0, LT 2.70m
375mm INV OUT = 11.64m
GRATE ELEV. = 13.35m

13 STA 109+43.8 LT 2.70m - 109+89.6 LT 1.12m
CONST. 46.3m X 450mm RCP, CLASS III
CONST. CB-B, +89.6, LT 1.12m
450mm INV OUT = 10.90m
375mm INV IN = 10.97m
GRATE ELEV. = 13.50m

14 STA 109+89.6 LT 1.12m - 109+93.7 LT 2.70m
CONST. 4.5m X 375mm RCP, CLASS III
CONST. CB-B, +93.7, LT 2.70m
375mm INV OUT = 11.01m
375mm INV IN = 11.09m
GRATE ELEV. = 13.40m

19 STA 109+43.8 LT 26.16m - 109+43.8 LT 20.10m
CONST. 4.5m X 300mm RCP, CLASS III
CONST. CB-B, +43.8, LT 20.10m
(ECCENTRIC CONE)
300mm INV OUT = 12.23m
GRATE ELEV. = 13.75m
CONST. 450mm METAL END SECTION FOR
300mm PIPE AT OUTLET
CONST. 0.9m X 2.9m STONE FILL, CLASS C, AT OUTLET
INVERT AT OUTLET = 11.88m

23 STA 400+45.5 RT 29.00m - 400+24.4 RT 4.60m
CONST. 27.4m X 300mm RCP, CLASS III
CONST. CB-B, +24.4, RT 4.60m
300mm INV OUT = 11.57m
GRATE ELEV. =13.10m
CONST. 450mm METAL END SECTION FOR
300mm PIPE AT OUTLET
CONST. 0.9m X 2.9m STONEFILL, CLASS C, AT OUTLET
REMOVE 43.7m EXISTING 375mm RCP, FROM
107+89.3 RT 38.5m TO 108+14.3 RT 3.5m
REMOVE EXISTING CB, 108+08.0 RT 22.5m
REMOVE EXISTING CB, 108+14.6 RT 3.5m
(SUBSID. TO ITEM 203.1)

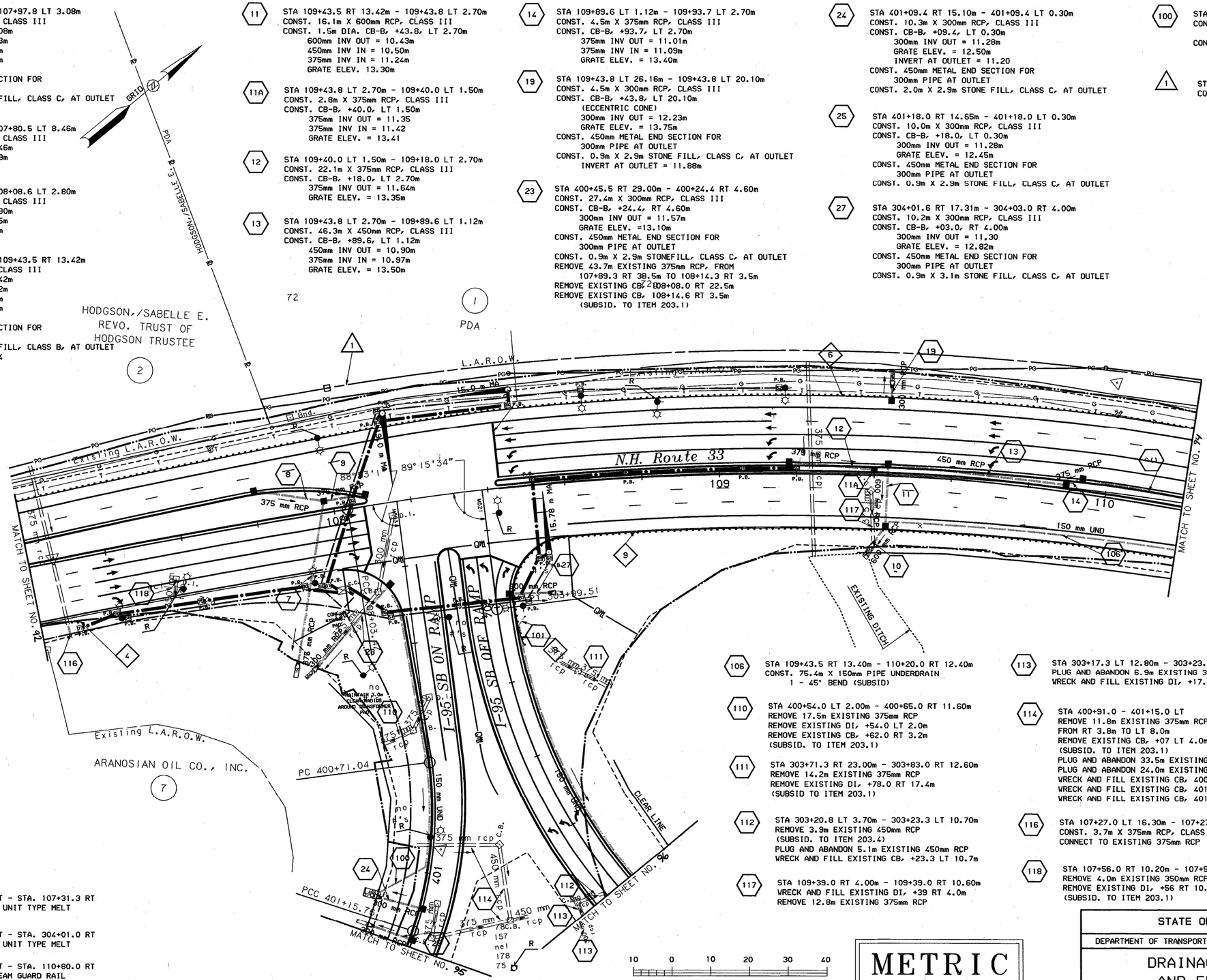
24 STA 401+09.4 RT 15.10m - 401+09.4 LT 0.30m
CONST. 10.3m X 300mm RCP, CLASS III
CONST. CB-B, +09.4, LT 0.30m
300mm INV OUT = 11.28m
GRATE ELEV. = 12.50m
INVERT AT OUTLET = 11.20
CONST. 450mm METAL END SECTION FOR
300mm PIPE AT OUTLET
CONST. 2.0m X 2.9m STONE FILL, CLASS C, AT OUTLET

25 STA 401+18.0 RT 14.65m - 401+18.0 LT 0.30m
CONST. 10.0m X 300mm RCP, CLASS III
CONST. CB-B, +18.0, LT 0.30m
300mm INV OUT = 11.28m
GRATE ELEV. = 12.45m
CONST. 450mm METAL END SECTION FOR
300mm PIPE AT OUTLET
CONST. 0.9m X 2.9m STONE FILL, CLASS C, AT OUTLET

27 STA 304+01.6 RT 17.31m - 304+03.0 RT 4.00m
CONST. 10.2m X 300mm RCP, CLASS III
CONST. CB-B, +03.0, RT 4.00m
300mm INV OUT = 11.30
GRATE ELEV. = 12.82m
CONST. 450mm METAL END SECTION FOR
300mm PIPE AT OUTLET
CONST. 0.9m X 3.1m STONE FILL, CLASS C, AT OUTLET

100 STA 400+27.0 RT 4.40m - 401+07.8 RT 11.20m
CONST. 88.0m X 150mm PIPE UNDERDRAIN
1 - 45° BEND (SUBSID.)
CONST. UH-2 HEADWALL AT OUTLET
INVERT AT OUTLET = 11.22

1 STA. 107+87.6 LT 25.3m - 111+72.6 LT 32.0m
CONST. 409.5m X CHAIN LINK FENCE WITH
VINYL-COATED STEEL FABRIC
1.8 METERS HIGH (ITEM 607.318)



106 STA 109+43.5 RT 13.40m - 110+20.0 RT 12.40m
CONST. 75.4m X 150mm PIPE UNDERDRAIN
1 - 45° BEND (SUBSID)

110 STA 400+54.0 LT 2.00m - 400+65.0 RT 11.60m
REMOVE 17.5m EXISTING 375mm RCP
REMOVE EXISTING DI, +54.0 LT 2.0m
REMOVE EXISTING CB, +62.0 RT 3.2m
(SUBSID. TO ITEM 203.1)

111 STA 303+71.3 RT 23.00m - 303+83.0 RT 12.60m
REMOVE 14.2m EXISTING 375mm RCP
REMOVE EXISTING DI, +78.0 RT 17.4m
(SUBSID TO ITEM 203.1)

112 STA 303+20.8 LT 3.70m - 303+23.3 LT 10.70m
REMOVE 3.9m EXISTING 450mm RCP
(SUBSID. TO ITEM 203.4)
PLUG AND ABANDON 5.1m EXISTING 450mm RCP
WRECK AND FILL EXISTING CB, +23.3 LT 10.7m

117 STA 109+39.0 RT 4.00m - 109+39.0 RT 10.60m
WRECK AND FILL EXISTING DI, +39 RT 4.0m
REMOVE 12.8m EXISTING 375mm RCP

113 STA 303+17.3 LT 12.80m - 303+23.3 LT 10.70m
PLUG AND ABANDON 6.9m EXISTING 300mm RCP
WRECK AND FILL EXISTING DI, +17.3 LT 12.8m

114 STA 400+91.0 - 401+15.0 LT
REMOVE 11.8m EXISTING 375mm RCP
FROM RT 3.8m TO LT 8.0m
REMOVE EXISTING CB, +07 LT 4.0m
(SUBSID. TO ITEM 203.1)
PLUG AND ABANDON 33.5m EXISTING 375mm RCP
PLUG AND ABANDON 24.0m EXISTING 450mm RCP
WRECK AND FILL EXISTING CB, 400+91 LT 17.5m
WRECK AND FILL EXISTING CB, 401+07 LT 23.4m
WRECK AND FILL EXISTING CB, 401+15 LT 5.2m

116 STA 107+27.0 LT 16.30m - 107+27.1 LT 20.00m
CONST. 3.7m X 375mm RCP, CLASS III
CONNECT TO EXISTING 375mm RCP

118 STA 107+56.0 RT 10.20m - 107+54.0 RT 16.00m
REMOVE 4.0m EXISTING 350mm RCP
REMOVE EXISTING DI, +56 RT 10.2m
(SUBSID. TO ITEM 203.1)

4 STA. 107+20.0 RT - STA. 107+31.3 RT
CONST. TERMINAL UNIT TYPE MELT

8 STA. 303+89.5 RT - STA. 304+01.0 RT
CONST. TERMINAL UNIT TYPE MELT

9 STA. 304+01.0 RT - STA. 110+80.0 RT
CONST. 244.9m BEAM GUARD RAIL

10 0 10 20 30 40
SCALE IN METERS

METRIC

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

DRAINAGE, GUARDRAIL AND FENCING PLANS

MULTIPLOT NAME	*.FGB FILE NAME	DRAWING NAME	WINDOW NAME	SHEET SCALE	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
DRNSH03.DAT	ASSEMBLER	SHEET03	DRNSH03	1:500	CM-5379(017)	12250	93	282

REVISIONS AFTER PROPOSAL

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PROPOSED DESIGN	
SHEET CHECKED J. KIROUAC, A. KING	8/98
CADD PLOT E. RICHARDSON, J.HEBERT	8/98
AS BUILT DETAILS	

15 STA 109+93.7 LT 2.70m - 110+69.6 LT 1.00m
CONST. 76.0m X 375mm RCP, CLASS III
CONST. CB-B, +69.6, LT 1.00m
375mm INV OUT = 11.73m
375mm INV IN = 11.81m
GRATE ELEV. = 13.92m

16 STA 110+69.6 LT 1.00m - 111+05.0 RT 0.70m
CONST. 35.5m X 375mm RCP, CLASS III
CONST. CB-B, +05.0, RT 0.70m
375mm INV OUT = 12.11m
375mm INV IN = 12.19m
GRATE ELEV. = 13.95

17 STA 111+05.0 RT 0.70m - 111+60.5 LT 3.45m
CONST. 55.8m X 375mm RCP, CLASS III
CONST. CB-B, +60.5, LT 3.45m
375mm INV OUT = 12.73m
375mm INV IN = 12.80m
GRATE ELEV. = 14.55m

18 STA 111+60.5 LT 3.45m - 111+60.8 LT 5.90m
CONST 2.7m X 375mm RCP, CLASS III
CONST. CB-B, +60.8, LT 5.90m
375mmINV OUT = 12.83m
GRATE ELEV. = 14.35m

7 STA. 700+26.7 LT - STA. 700+38.0 LT
CONST. TERMINAL UNIT TYPE MELT

10 STA. 110+80.0 RT STA. 110+93.3 RT
CONST. TERMINAL UNIT TYPE MELT

11 STA. 112+38.0 RT - STA. 112+49.9 RT
CONST. TERMINAL UNIT TYPE MELT

12 STA. 112+49.9 RT - STA. 113+90.0 RT
CONST. 140.10m BEAM GUARD RAIL
CONNECT TO EXISTING GUARD RAIL
no #'s

20 STA 111+63.2 LT 28.70m - 1+66.3 RT 2.37m
CONST. 39.6m X 600mm RCP, CLASS III
CONST. PC-8 HEADWALL, +63.0, LT 20.71m
INV AT HEADWALL = 12.28m
CONST. PC-8 HEADWALL, +62.1, RT 18.80m
INV AT HEADWALL = 12.04m
CONST. (1.7m-5.8m) X 8.3m STONE FILL, CLASS B, AT INLET
CONST. 6.4m X 10.0m STONE FILL, CLASS B, AT OUTLET
CONST. 2.4m WIDE DRAINAGE DITCH
(SEE DETAIL ON SHEET 157)
CONST. 5.4m X 26.44m STONE FILL, CLASS B, AT DITCH OUTLET
REMOVE 40m X 375mm RCP, SUBSIDIARY

42 STA 700+29.0 LT 18.95m - 700+~~25.8~~ 27.0 LT 8.30m
CONST. 11.0m X 450mm RCP, CLASS III
CONST. CB-B, +25.8, LT 8.30m
450mm INV OUT = 13.86m
450mm INV IN = 13.93m
GRATE ELEV. = 15.61m
INV AT OUTLET = 13.60m

43 STA 700+~~25.8~~ 29.0 LT 8.30m - 700+~~25.8~~ 27.0 RT 2.10m
CONST. 10.0m X 450mm RCP, CLASS III
CONST. CB-B, +25.8, RT 2.10m
450mm INV OUT = 14.12m
375mm INV IN = 14.18m
375mm INV IN = 14.18m
GRATE ELEV. = 15.88m

44 STA 112+23.6 LT 30.75m - 700+40.0 RT 17.75m
CONST. 38.3m X 450mm RCP, CLASS III
CONST. PC-10 HEADWALL, +31, LT 19.50m
INV AT HEADWALL = 13.60m
CONST. PC-8 HEADWALL, +40.0, RT 17.75m
INV AT HEADWALL = 12.40m
CONST. 7.0m X 37.0m STONE FILL, CLASS B, AT OUTLET
INV AT OUTLET = 13.60m
CONST. 3.1m X 27.2m STONE FILL, CLASS C, AT 700+13.5 LT 21.00m - 700+60.0 LT 12.00m
SEE DN3-78 FOR REVISED HEADWALL

45 STA 700+25.8 RT 2.10m - 112+88.0 LT 17.40m
CONST. 18.0m X 375mm RCP, CLASS III
CONST. CB-B, +88.0, LT 17.40m
375mm INV OUT = 14.54m
GRATE ELEV. = 16.30m

46 STA 700+25.8 LT 17.40m - 700+34.2 RT 9.10m
CONST. 10.5m X 375mm RCP, CLASS III
CONST. CB-B, +34.2, RT 9.10m
375mm INV OUT = 14.28m
GRATE ELEV. = 16.15m

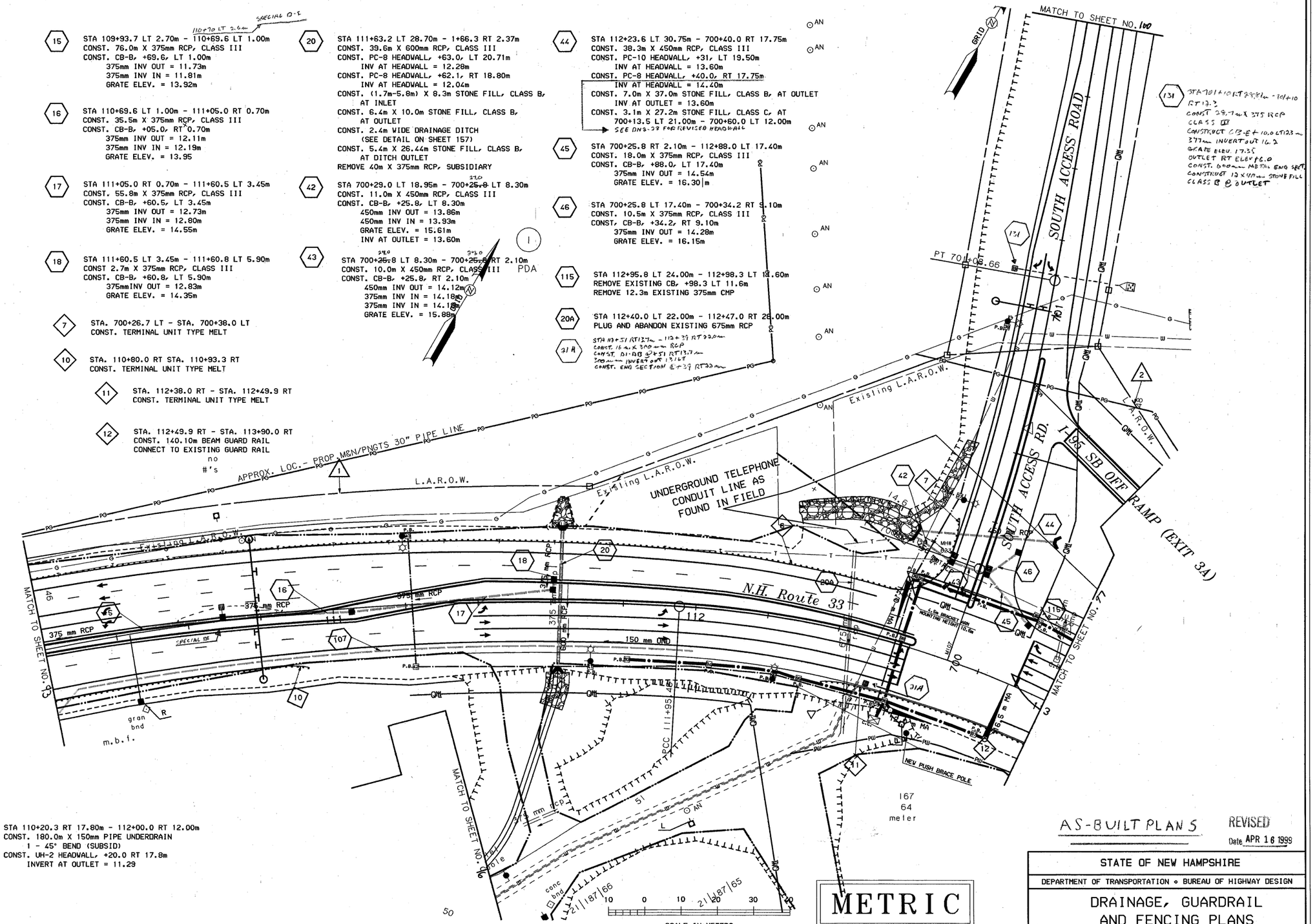
115 STA 112+95.8 LT 24.00m - 112+98.3 LT 12.60m
REMOVE EXISTING CB, +98.3 LT 11.6m
REMOVE 12.3m EXISTING 375mm CMP

20A STA 112+40.0 LT 22.00m - 112+47.0 RT 26.00m
PLUG AND ABANDON EXISTING 675mm RCP

31A STA 113+51 RT 27m - 112+39 RT 33.0m
CONST. 16.4m X 300mm RCP
CONST. D1-DB @ 113+51 RT 13.7m
300mm INVERT OUT 13.68
CONST. END SECTION @ 112+39 RT 33.0m

131 STA 701+10 RT 33.1m - 701+10 RT 13.3
CONST 28.7m X 375 RCP CLASS III
CONSTRUCT C7-E+ 10.0 LT 23.4m
377mm INVERT OUT 16.2
GRATE ELEV. 17.35
OUTLET RT ELEV 16.0
CONST. 600mm METAL END SECT.
CONSTRUCT 12 X 11m STONE FILL CLASS B @ OUTLET

107 STA 110+20.3 RT 17.80m - 112+00.0 RT 12.00m
CONST. 180.0m X 150mm PIPE UNDERDRAIN
1 - 45° BEND (SUBSID)
CONST. UH-2 HEADWALL, +20.0 RT 17.8m
INVERT AT OUTLET = 11.29



AS-BUILT PLANS REVISED Date APR 16 1999

METRIC

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

DRAINAGE, GUARDRAIL AND FENCING PLANS

MULTIPLOT NAME	*.FGB FILE NAME	DRAWING NAME	WINDOW NAME	SHEET SCALE	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
DRNSH04.DAT	ASSEMBLER	SHEET04	DRNSH04	1:500	CM-5379(017)	12250	94	282

REVISIONS AFTER PROPOSAL

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CADD PLOT	E. RICHARDSON, J.HEBERT	DATE 8/98
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REVISIONS AFTER PROPOSAL			
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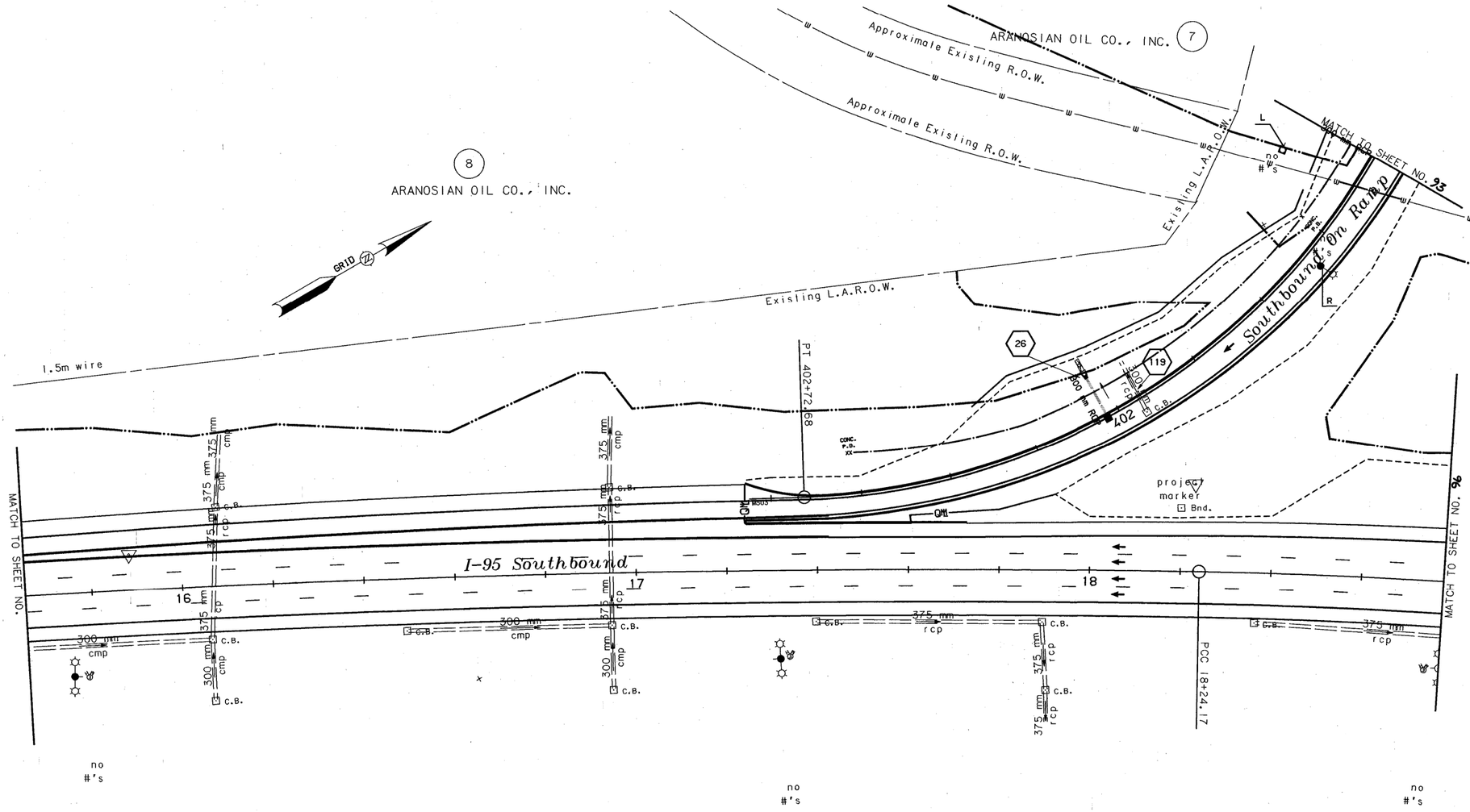
AS BUILT DETAILS		DATE



26 STA 402+02.9 RT 13.90m - 402+02.9 LT 0.30m
CONST. 10.5m X 300mm RCP, CLASS III
CONST. CB-B, +02.9, LT 0.30m
300mm INV OUT = 12.00m
GRATE ELEV. = 13.70m
CONST. 450mm METAL END SECTION FOR
300mm PIPE AT OUTLET
CONST. 0.9m X 2.9m STONE FILL, CLASS C, AT OUTLET
INV AT OUTLET = 11.60m

119 STA 401+94.0 LT 3.90m - 401+94.0 RT 8.60m
REMOVE 12.5m EXISTING 300mm RCP
REMOVE EXISTING CB, +94.0 LT 3.9m
(SUBSID TO ITEM 203.1)

10 0 10 20 30 40
SCALE IN METERS

METRIC

MULTIPLOT NAME	*.FGB FILE NAME	DRAWING NAME	WINDOW NAME	SHEET SCALE
	ASSEMBLER	SHEET06	DRNSH06	1:500

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

DRAINAGE, GUARDRAIL AND FENCING PLANS

FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
CM-5379(017)	12250	95	282

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION

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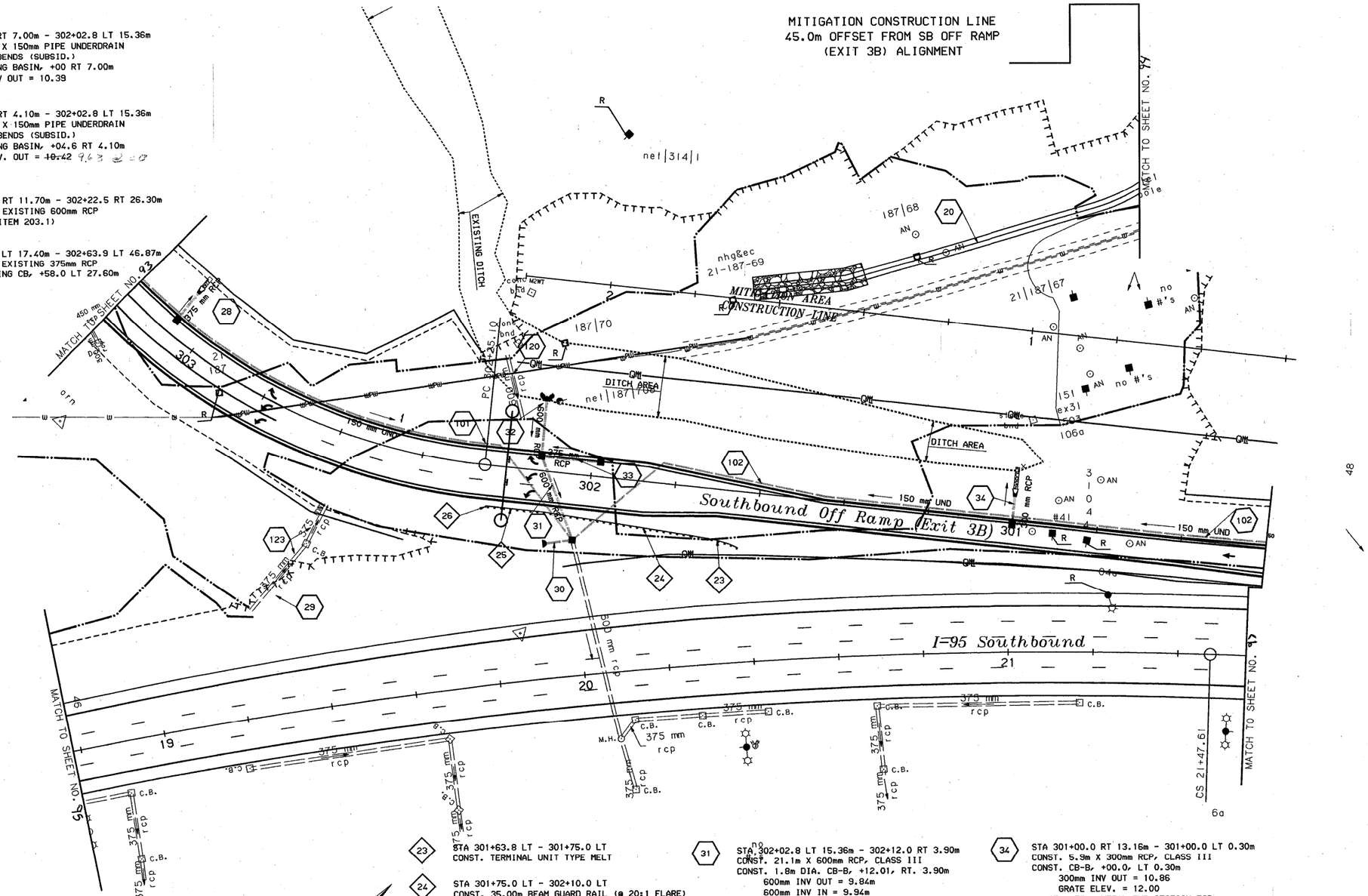
SHEET CHECKED J. KIRQUAC, A. KING	DATE 8/98
CADD PLOT E. RICHARDSON, J.HEBERT	DATE 8/98
AS BUILT DETAILS	DATE



101 STA 304+00.0 RT 7.00m - 302+02.8 LT 15.36m
CONST. 200.1m X 150mm PIPE UNDERDRAIN
2 - 45° BENDS (SUBSID.)
CONST. FLUSHING BASIN, +00 RT 7.00m
150mm INV OUT = 10.39

102 STA 300+04.6 RT 4.10m - 302+02.8 LT 15.36m
CONST. 207.4m X 150mm PIPE UNDERDRAIN
2 - 45° BENDS (SUBSID.)
CONST. FLUSHING BASIN, +04.6 RT 4.10m
150mm INV. OUT = ~~10.42~~ 9.63

120 STA 302+17.3 RT 11.70m - 302+22.5 RT 26.30m
REMOVE 15.4m EXISTING 600mm RCP
(SUBSID. TO ITEM 203.1)

123 STA 302+58.0 LT 17.40m - 302+63.9 LT 46.87m
REMOVE 30.2m EXISTING 375mm RCP
REMOVE EXISTING CB, +58.0 LT 27.60m

28 STA 303+07.3 RT 16.05m - 303+07.3 RT 3.90m
CONST. 7.1m X 375mm RCP, CLASS III
CONST. CB-B, +07.3, RT 3.90m
375mm INV OUT = 10.65
GRATE ELEV. = 11.90
CONST. 450mm METAL END SECTION FOR
375mm PIPE AT OUTLET
CONST. 0.9m X 3.9m STONE FILL, CLASS C, AT OUTLET
INV AT OUTLET = 10.45

29 STA 302+02.6 LT 16.85m - 19+25 LT 25.43m
CONST. DITCH (ITEM 206.1)

23 STA 301+63.8 LT - 301+75.0 LT
CONST. TERMINAL UNIT TYPE MELT

24 STA 301+75.0 LT - 302+10.0 LT
CONST. 35.00m BEAM GUARD RAIL (@ 20:1 FLARE)

25 STA 302+10.0 LT - 302+20.0 LT
CONST. 10.00m BEAM GUARD RAIL

26 STA 302+20.0 LT 302+23.8 LT
CONST. TERMINAL UNIT TYPE G-2

30 STA 302+02.8 LT 15.36m - 302+08.6 LT 16.85m
CONST. 6.0m X 450mm RCP, CLASS III
CONST. 1.8m DIA. CB-E, +02.8, LT 15.23m
(SLAB TOP, NO SUMP)
600mm INV OUT = 9.55m
600mm INV IN = 9.63m
450mm INV IN = 9.90m
150mm INV IN = 9.63m
150mm INV IN = 9.63m
GRATE ELEV. = 10.85m
CONST. 600mm METAL END SECTION FOR
450mm PIPE AT INLET

31 STA 302+02.8 LT 15.36m - 302+12.0 RT 3.90m
CONST. 21.1m X 600mm RCP, CLASS III
CONST. 1.8m DIA. CB-B, +12.01, RT. 3.90m
600mm INV OUT = 9.84m
600mm INV IN = 9.94m
375mm INV IN = 9.94m
GRATE ELEV. = 11.45m

32 STA 302+12.0 RT 3.90m - 302+12.2 RT 17.59m
CONST. 13.7m X 600mm RCP, CLASS III
CONST. PC-8 HEADWALL, +12.22, RT 17.59 m
INV AT HEADWALL = 10.14m

33 STA 302+12.0 RT 3.90m - 301+98.0 RT 3.90m
CONST. 13.8m X 375mm RCP, CLASS III
CONST CB-B, +98.0, RT 3.90m
375mm INV OUT = 9.98m
GRATE ELEV. = 11.48m

34 STA 301+00.0 RT 13.16m - 301+00.0 LT 0.30m
CONST. 5.9m X 300mm RCP, CLASS III
CONST. CB-B, +00.0, LT 0.30m
300mm INV OUT = 10.86
GRATE ELEV. = 12.00
CONST. 450mm METAL END SECTION FOR
300mm PIPE AT OUTLET
CONST. 0.9m X 6.8m STONE FILL, CLASS C, AT OUTLET
INV AT OUTLET = 10.81m

10 0 10 20 30 40
SCALE IN METERS

AS-BUILT PLANS REVISED
Date APR 16 1999

METRIC

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

DRAINAGE, GUARDRAIL AND FENCING PLANS

MULTIPLOT NAME	*.FGB FILE NAME	DRAWING NAME	WINDOW NAME	SHEET SCALE	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
	ASSEMBLER	SHEET07	DRNSH07	1:500	CM-5379(017)	12250	96	282

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION

NOTEBOOKS

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EXISTING DETAIL	DATE	
PROPOSED DESIGN	DATE	
SHEET CHECKED	J. KIROUAC, A. KING	DATE 8/98
CADD PLOT	E. RICHARDSON, J.HEBERT	DATE 8/98
AS BUILT DETAILS		DATE

(40) STA 502+83.3 LT 17.47m - 502+78.2 LT 0.30m
CONST. 16.9m X 450mm RCP, CLASS III
CONST. CB-B, +78.2, LT 0.30m
450mm INV OUT = 14.79
450mm INV IN = 14.88
GRATE ELEV. = 16.52
CONST. 600mm METAL END SECTION FOR
450mm PIPE AT OUTLET
INVERT AT OUTLET = 14.60
CONST. 3.2m X 8.0m STONE FILL, CLASS B, AT OUTLET

(41) STA 502+78.2 LT 0.30m - 502+99.8 RT 8.91m
CONST. 23.1m X 450mm RCP, CLASS III
CONST. PC-8 HEADWALL, +99.8, RT 8.91m
INV AT HEADWALL = 15.50

(103) STA 22+53.0 LT 21.40m - 300+01.3 RT 0.90m
CONST. 53.7m X 150mm PIPE UNDERDRAIN

(104) STA 23+29.5 LT 17.10m - 22+55.1 LT 22.00m
CONST. 73.8m X 150mm PIPE UNDERDRAIN

(128) STA 23+31.7 LT 18.40m - 24.20.0 LT 12.40m
CONST. 88.5m x 150mm PIPE UNDERDRAIN
CONNECT TO EXISTING BASIN, 23+31.7 LT 18.40m

(121) STA 501+51.6 RT 11.10m - 502+82.4 LT 22.80m
REMOVE EXISTING MH, 502+82.4 LT 22.80m
REMOVE 16m EXISTING 300mm RCP, FROM +82.4
TO +68.6 LT (SUBSID TO ITEM 203.1)
PLUG AND ABANDON 119.4m EXISTING 300mm RCP
WRECK AND FILL EXISTING CB, 501+51.6 RT 11.10m
WRECK AND FILL EXISTING CB, 502+13.0 RT 2.68m

(122) STA 113+25.3 LT 31.70m - 113+45.4 LT 30.60m
REMOVE EXISTING CB, +35.5 LT 10.00m
REMOVE EXISTING CB, +45.4 LT 30.64m
REMOVE 22.3m EXISTING 300mm CMP
REMOVE 21.5m EXISTING 375mm RCP
(SUBSID. TO ITEM 203.1)

(21) STA 113+95.2 RT 9.90m
ADJUST COVER AND FRAME, +95.2 RT 9.90m
(ITEM 604.55)
GRATE ELEV. = 19.59

(22) STA 113+95.1 LT 22.67m - 113+95.8 LT 13.30m
CONST. 7.8m X 300mm RCP, CLASS III
CONST. CB-B, +95.8, LT 13.30m
300mm INV OUT = 18.30
GRATE ELEV. = 19.91
CONST. 450mm METAL END SECTION FOR
300mm PIPE AT OUTLET
CONST. 1.0m X 3.0m STONE FILL, CLASS C, AT OUTLET
INV AT OUTLET = 17.50

(124) STA 113+95.3 LT 10.05m - 113+95.3 LT 22.67m
WRECK AND FILL EXISTING CB, LT 10.05m
REMOVE 12.5m EXISTING 300mm CMP LT 10.05m - 22.67m

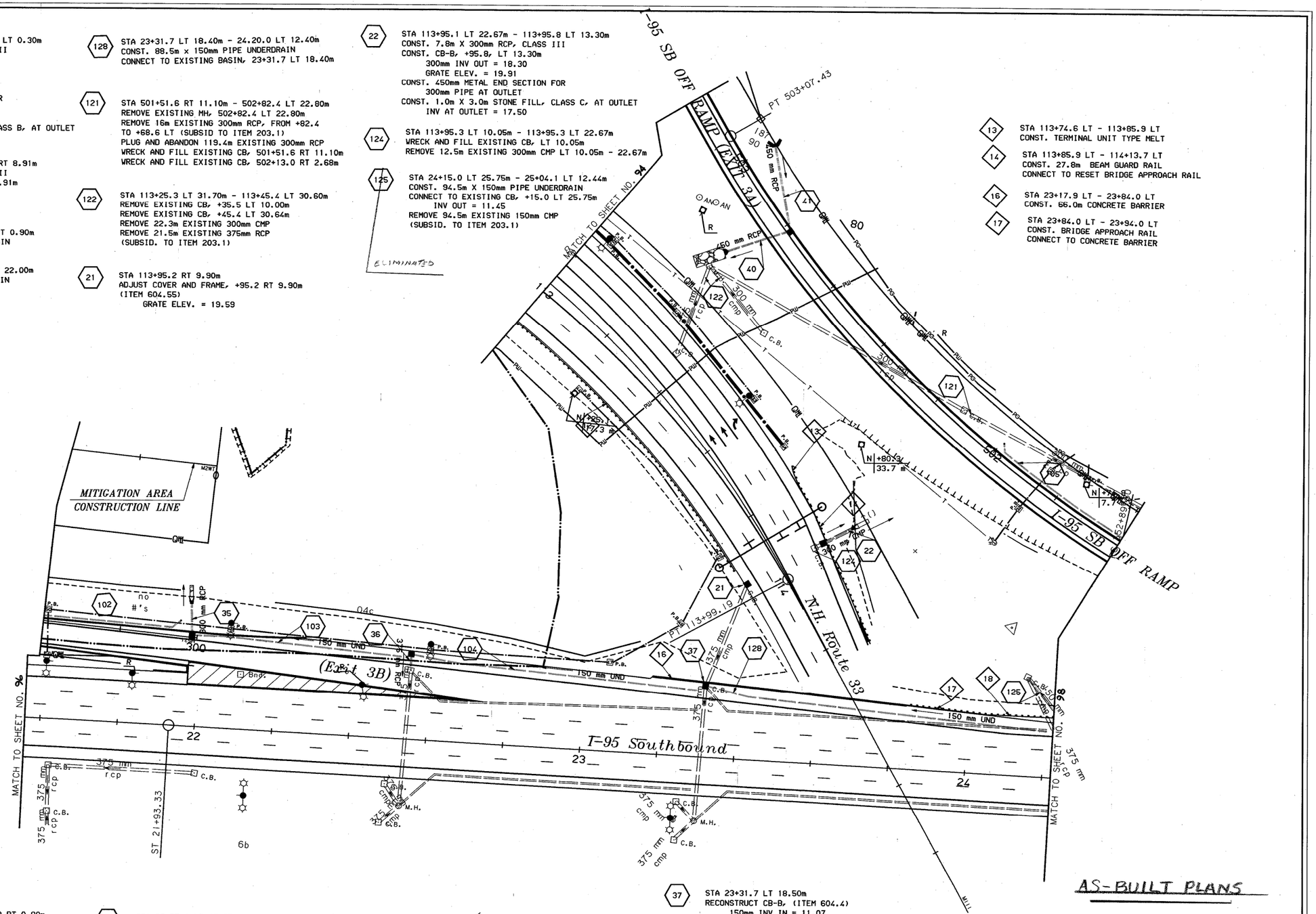
(125) STA 24+15.0 LT 25.75m - 25+04.1 LT 12.44m
CONST. 94.5m X 150mm PIPE UNDERDRAIN
CONNECT TO EXISTING CB, +15.0 LT 25.75m
INV OUT = 11.45
REMOVE 94.5m EXISTING 150mm CMP
(SUBSID. TO ITEM 203.1)
ELIMINATED

(13) STA 113+74.6 LT - 113+85.9 LT
CONST. TERMINAL UNIT TYPE MELT

(14) STA 113+85.9 LT - 114+13.7 LT
CONST. 27.8m BEAM GUARD RAIL
CONNECT TO RESET BRIDGE APPROACH RAIL

(16) STA 23+17.9 LT - 23+84.0 LT
CONST. 66.0m CONCRETE BARRIER

(17) STA 23+84.0 LT - 23+94.0 LT
CONST. BRIDGE APPROACH RAIL
CONNECT TO CONCRETE BARRIER



(35) STA 300+03.6 RT 12.10m - 300+01.3 RT 0.90m
CONST. 8.0m X 300mm RCP, CLASS III
CONST. CB-B, +01.3, RT 0.90m
300mm INV OUT = 11.15m
150mm INV IN = 11.20m
GRATE ELEV. = 12.45m
CONST. 450mm METAL END SECTION FOR
300mm PIPE AT OUTLET
INVERT AT OUTLET = 11.08
CONST. 0.9m X 2.9m STONE FILL, CLASS C, AT OUTLET

(36) STA 22+55.1 LT 17.95m - 22+55.1 LT 22.70m
CONST. 4.8m X 375mm RCP, CLASS III
CONST. CB-B, +55.1, LT 22.70m
375mm INV OUT = 10.56m
150mm INV IN = 11.20m
GRATE ELEV. = 12.60m
(CONNECT TO EXISTING 375mm RCP AT
+55.1, LT 17.95m)
REMOVE CB AT +55.1, LT 17.95m, (ITEM 202.5)

(37) STA 23+31.7 LT 18.50m
RECONSTRUCT CB-B, (ITEM 604.4)
150mm INV IN = 11.07

GRID N

no #'s

10 0 10 20 30 40
SCALE IN METERS

AS-BUILT PLANS

METRIC

MULTIPLOT NAME	*.FGB FILE NAME	DRAWING NAME	WINDOW NAME	SHEET SCALE
	ASSEMBLER	SHEET08	DRNSH08	1:500

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

DRAINAGE, GUARDRAIL AND FENCING PLANS

FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
CM-5379(017)	12250	97	282

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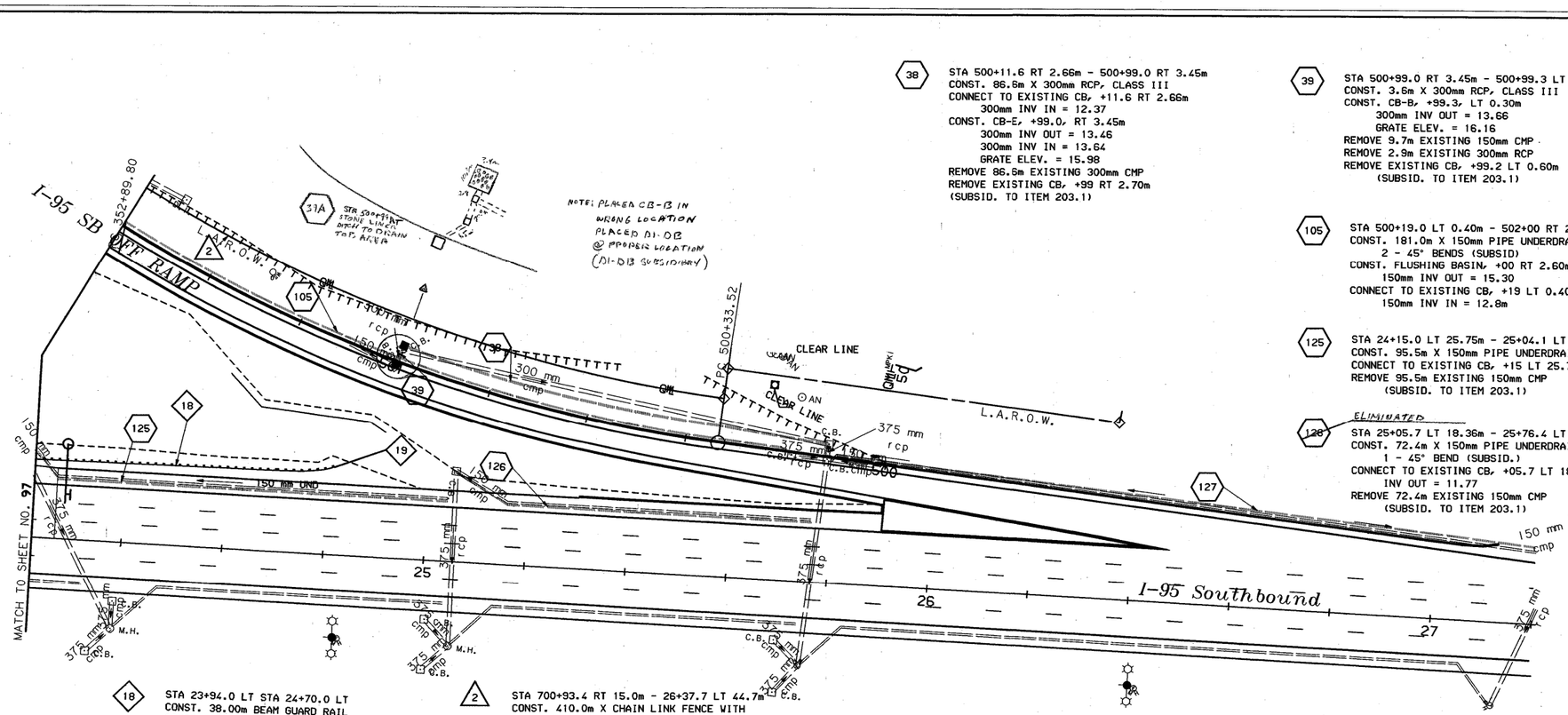


38 STA 500+11.6 RT 2.66m - 500+99.0 RT 3.45m
CONST. 86.6m X 300mm RCP, CLASS III
CONNECT TO EXISTING CB, +11.6 RT 2.66m
300mm INV IN = 12.37
CONST. CB-E, +99.0, RT 3.45m
300mm INV OUT = 13.46
300mm INV IN = 13.64
GRATE ELEV. = 15.98
REMOVE 86.6m EXISTING 300mm CMP
REMOVE EXISTING CB, +99 RT 2.70m
(SUBSID. TO ITEM 203.1)

39 STA 500+99.0 RT 3.45m - 500+99.3 LT 0.30m
CONST. 3.6m X 300mm RCP, CLASS III
CONST. CB-B, +99.3, LT 0.30m
300mm INV OUT = 13.66
GRATE ELEV. = 16.16
REMOVE 9.7m EXISTING 150mm CMP
REMOVE 2.9m EXISTING 300mm RCP
REMOVE EXISTING CB, +99.2 LT 0.60m
(SUBSID. TO ITEM 203.1)

105 STA 500+19.0 LT 0.40m - 502+00 RT 2.60m
CONST. 181.0m X 150mm PIPE UNDERDRAIN
2 - 45° BENDS (SUBSID)
CONST. FLUSHING BASIN, +00 RT 2.60m
150mm INV OUT = 15.30
CONNECT TO EXISTING CB, +19 LT 0.40m
150mm INV IN = 12.8m

125 STA 24+15.0 LT 25.75m - 25+04.1 LT 12.44
CONST. 95.5m X 150mm PIPE UNDERDRAIN
CONNECT TO EXISTING CB, +15 LT 25.75m
REMOVE 95.5m EXISTING 150mm CMP
(SUBSID. TO ITEM 203.1)

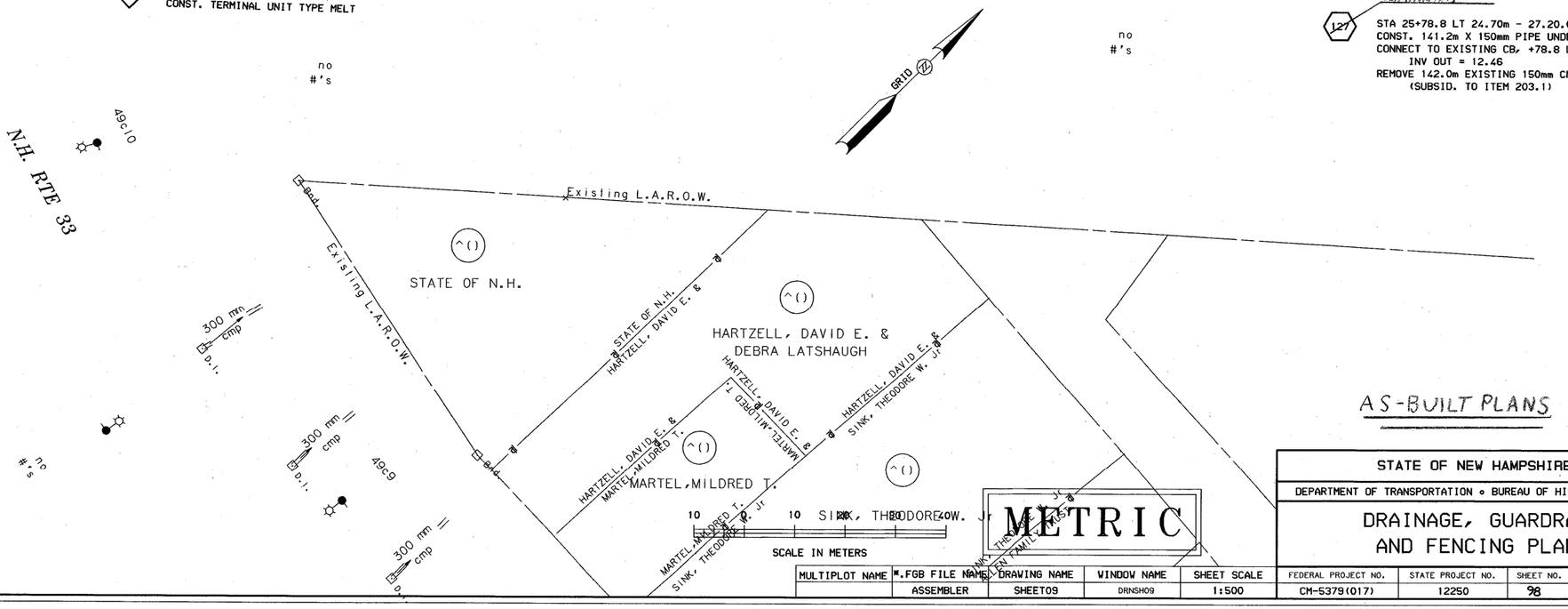
126 ELIMINATED
STA 25+05.7 LT 18.36m - 25+76.4 LT 12.00m
CONST. 72.4m X 150mm PIPE UNDERDRAIN
1 - 45° BEND (SUBSID.)
CONNECT TO EXISTING CB, +05.7 LT 18.36m
INV OUT = 11.77
REMOVE 72.4m EXISTING 150mm CMP
(SUBSID. TO ITEM 203.1)

18 STA 23+94.0 LT STA 24+70.0 LT
CONST. 38.00m BEAM GUARD RAIL
CONST. 20:1 FLARE FROM STA 24+05.0 LT
TO 24+26.8 LT

19 STA 24+70.0 LT STA 24+81.4 LT
CONST. TERMINAL UNIT TYPE MELT

2 STA 700+93.4 RT 15.0m - 26+37.7 LT 44.7m
CONST. 410.0m X CHAIN LINK FENCE WITH
VINYL-COATED STEEL FABRIC
1.8 METERS HIGH (ITEM 607.318)

127 ELIMINATED
STA 25+78.8 LT 24.70m - 27.20.0 LT 15.56m
CONST. 141.2m X 150mm PIPE UNDERDRAIN
CONNECT TO EXISTING CB, +78.8 LT 24.70m
INV OUT = 12.46
REMOVE 142.0m EXISTING 150mm CMP
(SUBSID. TO ITEM 203.1)



AS-BUILT PLANS

METRIC

MULTIPLOT NAME	*.FGB FILE NAME	DRAWING NAME	WINDOW NAME	SHEET SCALE
	ASSEMBLER	SHEET09	DRNSH09	1:500

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DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

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57 STA 8+67.6 LT 62.81m - 8+10.0 LT 31.50
CONST. 28.6m X 3.0m TREAATMENT SWALE
CONST. 21.9m X 5.6m STONE FILL, CLASS B
AT SWALE OUTLET (SEE DETAIL)
CONST. 13.7m X 750mm RCP, CLASS III
CONST. PC-8 HEADWALL , +20.7, LT 40.19m
INV AT HEADWALL =17.96
CONST. 1.5m DIA. CB W/MH COVER AND FRAME, +10.0, LT 31.50m
750mm INV OUT = 18.05m
750mm INV IN = 18.13m
MH COVER ELEV. = 20.10m
CONST. 5.4m X 10.5m STONE FILL, CLASS B, AT OUTLET

58 STA 8+10.0 LT 31.50m - 80+14.4 LT 14.44m
CONST. 15.6m X 750mm RCP, CLASS III
CONST 1.8m DIA. CB-B, +14.4, LT 14.44m
750mm INV OUT = 18.31m
750mm INV IN =18.39m
375mm INV IN = 19.11m
GRATE ELEV. = 20.65m

59 STA 80+14.4 LT 14.44m - 8+19.2 LT 17.86m
CONST. 4.5m X 375mm RCP, CLASS III
CONST. CB-B, +19.2, LT 17.86m
375mm INV OUT = 19.20m
GRATE ELEV. = 20.70m

60 STA 80+14.4 LT 14.44m - 80+24.4 RT 2.32m
CONST. 19.5m X 750mm RCP, CLASS III
CONST. 1.5m DIA. CB-B, +24.4, RT 2.32m
750mm INV OUT = 18.49m
600mm INV IN = 18.57m
GRATE ELEV. = 20.75m

61 STA 80+24.4 RT 2.32m - 80+46.0 RT 23.45m
CONST. 30.0m X 600mm RCP, CLASS III
CONST. CB-B, +46.0, RT 23.45m
600mm INV OUT = 18.78m
600mm INV IN = 18.95m
GRATE ELEV. = 20.95m

62 STA 80+46.0 RT 23.45m - 80+88.1 RT 33.55m
CONST. 44.0m 600mm RCP, CLASS III
CONST. CB-B, +88.1, RT 33.55m
600mm INV OUT = 19.07m
600mm INV IN = 19.15m
GRATE ELEV. = 21.30m

63 STA 80+88.1 RT 33.55m - 81+37.1 RT 33.55m
CONST. 49.1m X 600mm RCP, CLASS III
CONST. CB-B, +37.1, RT 33.55m
600mm INV OUT = 19.39m
600mm INV IN = 19.47m
GRATE ELEV. = 22.03m

64 STA 81+37.1 RT 33.55m - 81+57.1 RT 36.50m
CONST. 20.3m X 600mm RCP, CLASS III
(16.4m SUBSID. TO ITEM 660.75)
CONST. CB-B, +57.1, RT 36.50m
(SUBSID. TO ITEM 660.75)
600mm INV OUT = 19.62m
600mm INV IN = 19.70m
GRATE ELEV. = 22.00m

65 STA 81+57.1 RT 36.50m - 82+35.1 RT 37.08m
CONST. 78.0m X 600mm RCP, CLASS III
(88.0m SUBSID. TO ITEM 660.75)
CONST. CB-B, +35.1, RT 37.08m
600mm INV OUT = 20.10m
450mm INV IN = 20.18m
GRATE ELEV. = 21.95m

66 STA 82+35.1 RT 37.08m - 82+42.9 RT 31.47m
CONST. 9.5m X 450mm RCP, CLASS III
CONST. CB-B, +42.9, RT 31.47m
450mm INV OUT = 20.22m
375mm INV IN = 20.30m
GRATE ELEV. = 21.75m

67 STA 82+42.9 RT 31.47m - 82+48.9 RT 21.00m
CONST. 12.0m X 375mm RCP, CLASS III
CONST. CB-B, +48.9, RT 21.00m
375mm INV OUT = 20.36m
300mm INV IN = 20.43m
GRATE ELEV. = 21.79m

68 STA 82+48.9 RT 21.00m - 82+42.7 LT 33.20m
CONST. 54.0m X 300mm RCP, CLASS III
CONST. CB-B +42.7, LT 33.20m
300mm INV OUT =21.25m
GRATE ELEV. = 22.75m

69 STA 9+17.9 LT 55.00m - 8+60.0 LT 37.15m
CONST. 29.8m X 3.0m TREATMENT SWALE
CONST. 12.0m X 5.5m STONE FILL, CLASS B
AT SWALE OUTLET (SEE DETAIL)
CONST. 10.3m X 750mm RCP, CLASS III
CONST. PC-8 HEADWALL, +67.9, LT 43.91m
INV AT HEADWALL = 17.96m
CONST. 1.5m CB W/MH COVER AND FRAME, +60.0, LT 37.15m
750mm INV OUT = 18.08m
750mm INV IN = 18.16m
MH COVER ELEV. = 19.49
CONST. 5.4m X 13.4m STONE FILL, CLASS B, AT OUTLET

70 STA 8+60.0 LT 37.15m - 8+60.0 LT 20.00m
CONST. 17.2m X 750mm RCP, CLASS III
CONST. CB-B, +60.0, LT 20.00m
750mm INV OUT = 18.48m
750mm INV IN = 18.74m
GRATE ELEV. = 20.86

71 STA 8+60.0 LT 20.00m - 8+69.6 RT 0.75m
CONST. 22.8m X 750mm RCP, CLASS III
CONST. 1.8m DIA. CB-B, +69.6, RT 0.75m
750mm INV OUT = 18.88m
750mm INV IN = 18.96m
450mm INV IN = 19.07m
375mm INV IN = 19.03m
GRATE ELEV. = 21.00m

72 STA 8+69.6 RT 0.75m - 8+67.2 RT 2.64m
CONST. 2.0m X 750mm RCP, CLASS III
CONST. 1.5m DIA. CB-B, +67.2, RT 2.64m
750mm INV OUT = 18.96m
600mm INV IN = 19.03m
GRATE ELEV. = 21.05m

73 STA 8+67.2 RT 2.64m - 8+51.4 RT 14.69m
CONST. 20.0m X 600mm RCP, CLASS III
CONST. CB-B, +51.4, RT 14.69m
600mm INV OUT = 19.15m
600mm INV IN = 19.23m
GRATE ELEV. = 21.15m

74 STA 8+51.4 RT 14.69m - 8+34.3 RT 31.71m
CONST. 24.0m X 600mm RCP, CLASS III
CONST. CB-B, +34.3, RT 31.71m
600mm INV OUT = 19.42m
600mm INV IN = 19.50m
GRATE ELEV. = 21.35m

75 STA 8+34.3 RT 31.71m - 90+81.3 LT 20.83m
CONST. 22.0m X 600mm RCP, CLASS III
CONST. CB-B, +81.3, LT 20.83m
600mm INV OUT = 19.70m
450mm INV IN = 19.77m
GRATE ELEV. = 21.55m

76 STA 80+81.3 LT 20.83m - 81+03.1 LT 8.23m
CONST. 25.0m X 450mm RCP, CLASS III
CONST. CB-B, +03.1, LT 8.23m
450mm INV OUT = 20.07m
375mm INV IN = 20.15m
GRATE ELEV. = 21.80m

77 STA 81+03.1 LT 8.23m - 81+44.2 LT 5.45m
CONST. 40.9m X 375mm RCP, CLASS III
CONST. CB-B, +44.2, LT 5.45m
375mm INV OUT = 20.25m
375mm INV IN = 20.34m
GRATE ELEV. = 22.42m

78 STA 81+44.2 LT 5.45m - 81+45.0 LT 7.54m
CONST. 2.3m X 375mm RCP, CLASS III
CONST. CB-B, +45.0, LT 7.54m
375mm INV OUT = 20.86m
375mm INV IN = 20.94m
375mm INV IN = 20.84m
GRATE ELEV. = 22.47m

79 STA 81+45.0 LT 7.54m - 81+72.5 LT 7.54m
CONST. 27.5m X 375mm RCP CLASS III
CONST. CB-B, +72.5, LT 7.54m
375mm INV OUT = 21.16m
375mm INV IN = 21.24m
GRATE ELEV. 22.83m

80 STA 81+72.5 LT 7.54m - 81+72.5 LT 5.10m
CONST. 2.2m X 375mm RCP, CLASS III
CONST. CB-B, +72.5, LT 5.10m
375mm INV OUT = 21.26m
375mm INV IN = 21.34m
375mm INV IN = 21.34m
GRATE ELEV. = 22.75m

81 STA 81+72.5 LT 5.10m - 81+87.2 RT 8.50m
CONST. 19.2m 375mm RCP, CLASS III
(8.2m SUBSID. TO ITEM 660.75)
CONST. CB-B, +87.2, RT 8.50m
(SUBSID. TO ITEM 660.75)
375mm INV OUT = 21.60m
GRATE ELEV. = 22.75m

82 STA 81+72.5 LT 5.10m - 81+55.6 RT 10.50m
CONST. 23.0m X 375mm RCP, CLASS III
(11.5m SUBSID. TO ITEM 660.75)
CONST. CB-B, +55.6, RT 10.50m
(SUBSID. TO ITEM 660.75)
375mm INV OUT = 21.58m
GRATE ELEV. = 22.80m

83 STA 8+69.6 RT 0.75m - 63+98.0 LT 4.50m
CONST. 49.3m X 450mm RCP, CLASS III
CONST. CB-B, +98.0, LT 4.50m
450mm INV OUT = 19.47m
375mm INV IN = 19.79m
300mm INV IN = 19.55m
GRATE ELEV. = 21.65m

84 STA 63+98.0 LT 4.50m - 63+98.0 LT 7.50m
CONST. 2.4m X 300mm RCP, CLASS III
CONST. CB-B, +98.0, LT 7.50m
(ECCENTRIC CONE)
300mm INV OUT = 19.38m
GRATE ELEV. = 21.10m

86 STA. 81+45.0 LT 7.54m - 81+46.5 LT 30.63m
CONST. 28.1m X 375mm RCP, CLASS III
CONST. CB-B, +46.5, LT 30.63m
375mm INV OUT = 21.17m
GRATE ELEV. = 23.00m

87 STA 63+98.0 LT 4.50m - 64+42.4 LT 4.50m
CONST. 42.9m X 375mm RCP, CLASS III
CONST. CB-B, +42.4, LT 4.50m
375mm INV OUT = 20.43m
GRATE ELEV. = 22.00m

89 STA 8+69.6 RT 0.75m - 8+84.6 LT 8.12m
CONST. 17.5m X 375m RCP, CLASS III
CONST. CB-B, +84.6, LT 8.12m
375mm INV OUT = 19.39m
375mm INV IN = 19.47m
GRATE ELEV. = 21.10m

90 STA 8+84.6 LT 8.12m - 9+07.4 LT 20.00m
CONST. 25.5m X 375mm RCP, CLASS III
CONST. CB-B, +07.4, LT 20.00m
375mm INV OUT = 19.73m
GRATE ELEV. = 21.25m

20 STA 80+07.0 LT - STA 80+13.3 RT
CONST. TERMINAL UNIT TYPE MELT

21 STA 80+13.3 RT - STA 81+20.0 RT
CONST. 121.00m BEAM GUARD RAIL

22 STA 81+20.0 RT - STA 81+31.4 RT
CONST. TERMINAL UNIT TYPE MELT

MIRASOLA, JOHN J.
& MARY C.

SHADING REPRESENTS AREA OF CLEARING AND GRUBBING BEYOND CLEARING LINE

SCALE IN METERS
10 0 10 20 30 40

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

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47 STA 702+07.0 RT 23.22m - 702.15.3 LT 10.50m
CONST. 27.1m X 600mm RCP, CLASS III
CONST. 1.5m DIA. CB-E, +15.3, LT 10.50m
600mm INV OUT = 17.99m
600mm INV IN = 18.07m
GRATE ELE. = 19.98m
CONST. 750mm METAL END SECTION FOR
600mm PIPE AT OUTLET
CONST. 1.8m X 5.7m STONE FILL, CLASS B, AT OUTLET

48 STA 702+15.3 LT 10.50m - 702+90.0 LT 10.50m
CONST. 75.0m X 600mm RCP, CLASS III
CONST. CB-E, +90.0, LT 10.50m
600mm INV OUT =18.67m
450mm INV IN = 18.75m
GRATE ELEV. = 20.80m

49 STA 702+90.0 LT 10.50m - 703+40.0 LT 10.50m
CONST. 50.0m X 450mm RCP, CLASS III
CONST. 1.8m DIA. CB-E, +40.0, LT 10.50m
450mm INV OUT = 19.14m
375mm INV IN = 19.22m
300mm INV IN = 19.46m
GRATE ELEV. = 21.10m

50 STA 703+40.0 LT 10.50m - 703+62.0 LT 12.60m
CONST. 22.0m X 375mm RCP, CLASS III
CONST. CB-E, +62.0, LT 12.60m
375mm INV OUT = 19.65m
300mm INV IN = 19.73m
300mm INV IN = 19.91m
GRATE ELEV. = 21.51m

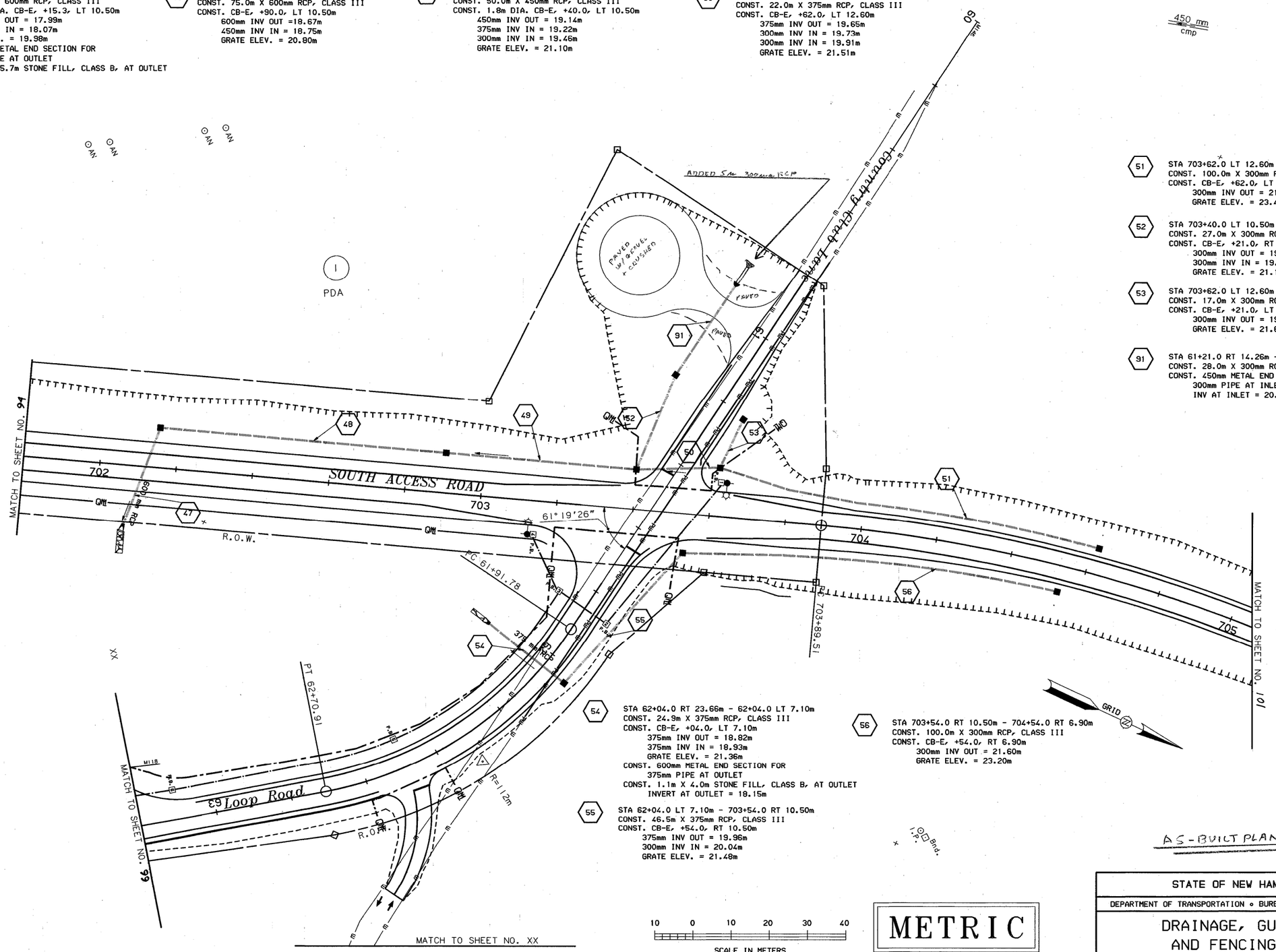
450 mm cmp

51 STA 703+62.0 LT 12.60m - 704+62.0 LT 6.90m
CONST. 100.0m X 300mm RCP, CLASS III
CONST. CB-E, +62.0, LT 6.90m
300mm INV OUT = 21.85m
GRATE ELEV. = 23.40m

52 STA 703+40.0 LT 10.50m - 61+21.0 RT 14.26m
CONST. 27.0m X 300mm RCP, CLASS III
CONST. CB-E, +21.0, RT 14.26m
300mm INV OUT = 19.87m
300mm INV IN = 19.96m
GRATE ELEV. = 21.15m

53 STA 703+62.0 LT 12.60m - 61+21.0 LT 6.90m
CONST. 17.0m X 300mm RCP, CLASS III
CONST. CB-E, +21.0, LT 6.90m
300mm INV OUT = 19.87m
GRATE ELEV. = 21.69m

91 STA 61+21.0 RT 14.26m - 60+92.0 RT 14.26m
CONST. 28.0m X 300mm RCP, CLASS III
CONST. 450mm METAL END SECTION FOR
300mm PIPE AT INLET
INV AT INLET = 20.80m



54 STA 62+04.0 RT 23.66m - 62+04.0 LT 7.10m
CONST. 24.9m X 375mm RCP, CLASS III
CONST. CB-E, +04.0, LT 7.10m
375mm INV OUT = 18.82m
375mm INV IN = 18.93m
GRATE ELEV. = 21.36m
CONST. 600mm METAL END SECTION FOR
375mm PIPE AT OUTLET
CONST. 1.1m X 4.0m STONE FILL, CLASS B, AT OUTLET
INVERT AT OUTLET = 18.15m

55 STA 62+04.0 LT 7.10m - 703+54.0 RT 10.50m
CONST. 46.5m X 375mm RCP, CLASS III
CONST. CB-E, +54.0, RT 10.50m
375mm INV OUT = 19.96m
300mm INV IN = 20.04m
GRATE ELEV. = 21.48m

56 STA 703+54.0 RT 10.50m - 704+54.0 RT 6.90m
CONST. 100.0m X 300mm RCP, CLASS III
CONST. CB-E, +54.0, RT 6.90m
300mm INV OUT = 21.60m
GRATE ELEV. = 23.20m

AS-BUILT PLANS

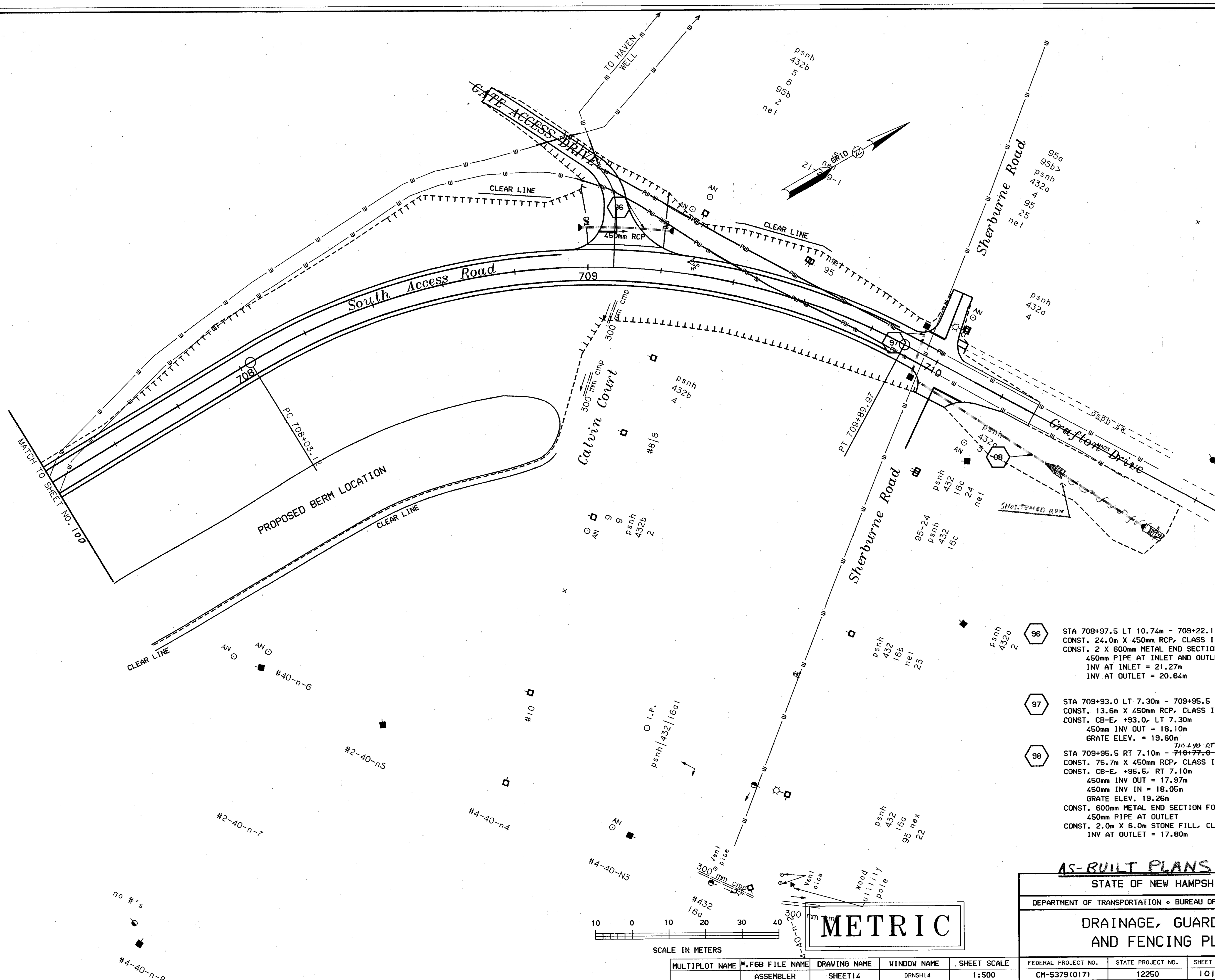
10 0 10 20 30 40
SCALE IN METERS

METRIC

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

DRAINAGE, GUARDRAIL AND FENCING PLANS

MULTIPLOT NAME	*.FGB FILE NAME	DRAWING NAME	WINDOW NAME	SHEET SCALE	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
	ASSEMBLER	SHEET11	DRNSH11	1:500	CM-5379(017)	12250	100	282



96 — STA 708+97.5 LT 10.74m - 709+22.1 LT 10.94m
CONST. 24.0m X 450mm RCP, CLASS III
CONST. 2 X 600mm METAL END SECTIONS FOR
450mm PIPE AT INLET AND OUTLET
INV AT INLET = 21.27m
INV AT OUTLET = 20.64m

97 — STA 709+93.0 LT 7.30m - 709+95.5 RT 7.10m
CONST. 13.6m X 450mm RCP, CLASS III
CONST. CB-E, +93.0, LT 7.30m
450mm INV OUT = 18.10m
GRATE ELEV. = 19.60m

98 — STA 709+95.5 RT 7.10m - ~~710+77.0 RT 13.60m~~ 710+40 RT10.0 (DN4-31)
CONST. 75.7m X 450mm RCP, CLASS III
CONST. CB-E, +95.5, RT 7.10m
450mm INV OUT = 17.97m
450mm INV IN = 18.05m
GRATE ELEV. 19.26m
CONST. 600mm METAL END SECTION FOR
450mm PIPE AT OUTLET
CONST. 2.0m X 6.0m STONE FILL, CLASS B, AT OUTLET
INV AT OUTLET = 17.80m

AS-BUILT PLANS

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

DRAINAGE, GUARDRAIL AND FENCING PLANS

MULTIPLOT NAME	*.FGB FILE NAME	DRAWING NAME	WINDOW NAME	SHEET SCALE	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
	ASSEMBLER	SHEET14	DRNSH14	1:500	CM-5379(017)	12250	101	282

EXISTING DETAIL		DATE
PROPOSED DESIGN	J. KIROUAC, A. KING	DATE 8/98
SHEET CHECKED	E. RICHARDSON, J.HEBERT	DATE 8/98
CADD PLOT		DATE
AS BUILT DETAILS		DATE

NOTEBOOKS

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BOOK	PAGE
BOOK	PAGE

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION

CONTOUR AND LANDSCAPING PLAN
PARKING LOT
RETENTION POND

KEY	ITEM DESCRIPTION	QUANT.	SPACING	NOTES
V-1	WILDFLOVER ESTABLISHMENT (WILDFLOWERS, STRAW MULCH, AND COMPOST)	210 m2		
	WILDFLOWER AREA SIGN	2 EA.		PLACEMENT AS DIRECTED
	RED PINE 2.5 m B & B	27 EA.	VARIES	AVOID UNDERGROUND UTILITES
	PIN OAK 75 mm CAL. B & B	3 EA.	16.5 m	
	CRIMSON CLOUD HAWTHORN 75 mm CAL. B & B	5 EA.	18 m	4 m FROM EP
	WINTER KING HAWTHORN 75 mm CAL. B & B	3 EA.	15 m	4 m FROM EP
	HETZ JUNIPER 0.6 m SPREAD C.G.	33 EA.	4.5 m	2.5 m FROM EP
	DOUBLE JAPANESE KERRIA 0.9 m C.G.	34 EA.	3.5 m, VARIES	2 LOCATIONS, ROWS 2.5 m APART
	PINK RUGOSA ROSE 0.8 m C.G.	30 EA.	3.5 m	ROWS 3.5 m APART
	PERSIAN LILAC 1.3 m B & B	15 EA.	3.5 m, 4 m	2 LOCATIONS (I-95 RAMP & FACILITY APPROACH)
	COMMON LILAC 1.3 m B & B	10 EA.	3 m	
	WAYFARINGTREE VIBURNUM 1.5 m B & B	14 EA.	3.5 m	

NOTE: PERFORM SELECTIVE CLEARING (ITEM 201.711) WITHIN DELINEATED AREA SURROUNDING THE CEMETERY. SELECTIVE CLEARING SHALL CONSIST OF THE FOLLOWING AND AS SPECIFIED IN THE SPECIAL PROVISION.

-REMOVE APPROXIMATELY 50% OF THE LILACS, LEAVING LILACS IN CLUMPS.

REMOVE OTHER DECIDUOUS VEGETAION AND TREAT STUMPS WITH AN APPROVED HERBICIDE. MOST OF THIS TYPE OF VEGETATION IS COMPRISED OF CHERRY, APPLE, AND VIRGINIA CREEPER SPECIES.

DO NOT APPLY GRASS SEED TO THE WILDFLOWER AREA

SHADING REPRESENTS AREA OF CLEARING AND GRUBBING BEYOND CLEARING LINE

REVISIONS AFTER PROPOSAL			
NUMBER	DATE	STATION	DESCRIPTION

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BOOK		PAGE
BOOK		PAGE

		DATE
EXISTING DETAIL		
PROPOSED DESIGN	A. KING	DATE 8/98
SHEET CHECKED	J. KIROUAC	DATE 8/98
AS-BUILT DETAILS		DATE

WINDOW NAME	MULTIPLOT NAME	.FGB NAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
CNTRPLAN	PARKLOT-POND _ CONTOURS	PROP_DR	CM-5379(017)	12250	102	282

CONTOUR AND LANDSCAPING PLAN
PARKING LOT
RETENTION POND

KEY	ITEM DESCRIPTION	QUANT.	SPACING	NOTES
	WILD FLOWER ESTABLISHMENT (WILD FLOWERS, STRAW MULCH, AND COMPOST)	210 m2		
	WILD FLOWER AREA SIGN	2 EA.		PLACEMENT AS DIRECTED
	RED PINE 2.5 m B & B	27 EA.	VARIES	AVOID UNDERGROUND UTILITES
	PIN OAK 75 mm CAL. B & B	50 EA.	12 m ±	
	CRIMSON CLOUD HAWTHORN 75 mm CAL. B & B	5 EA.	18 m	4 m FROM EP
	WINTER KING HAWTHORN 75 mm CAL. B & B	3 EA.	15 m	4 m FROM EP
	HETZ JUNIPER 0.6 m SPREAD C.G.	33 EA.	4.5 m	2.5 m FROM EP
	DOUBLE JAPANESE KERRIA 0.9 m C.G.	34 EA.	3.5 m, VARIES	2 LOCATIONS, ROWS 2.5 m APART
	PINK RUGOSA ROSE 0.8 m C.G.	30 EA.	3.5 m	ROWS 3.5 m APART
	PERSIAN LILAC 1.3 m B & B	15 EA.	3.5 m, 4 m	2 LOCATIONS (I-95 RAMP & FACILITY APPROACH)
	COMMON LILAC 1.3 m B & B	10 EA.	3 m	
	WAYFARING TREE VIBURNUM 1.5 m B & B	14 EA.	3.5 m	

NOTE: PERFORM SELECTIVE CLEARING (ITEM 201.711) WITHIN DELINEATED AREA SURROUNDING THE CEMETERY. SELECTIVE CLEARING SHALL CONSIST OF THE FOLLOWING AND AS SPECIFIED IN THS SPCIAL PROVISION.

-REMOVE APPROXIMATELY 50% OF THE LILACS, LEAVING LILACS IN CLUMPS.

-REMOVE OTHER DECIDUOUS VEGETAION AND TREAT STUMPS WITH AN APPROVED HERBICIDE. MOST OF THIS TYPE OF VEGETATION IS COMPRISED OF CHERRY, APPLE, AND VIRGINIA CREEPER SPECIES.

DO NOT APPLY GRASS SEED TO THE WILDFLOWER AREA

ITEM 201.711 - SELECTIVE CLEARING (SEE LANDSCAPING PLANS)

SAVE HORNBEAM CLUMP - HT. 5.5

0.7m Dia. Pine REMOVE ITEM 201.22

SHADING REPRESENTS AREA OF CLEARING AND GRUBBING BEYOND CLEARING LINE

SUPERSEDED DATE 9-30-98

REVISIONS AFTER PROPOSAL

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BOOK	PAGE	

		DATE
EXISTING DETAIL		
PROPOSED DESIGN	A. KING	8/98
SHEET CHECKED	J. KIRDUAC	8/98
AS-BUILT DETAILS/		DATE

WINDOW NAME	MULTIPLOT NAME	.FGB NAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
CNTRPLAN	PARKLOT-POND _ CONTOURS	PROP_DR	CM-5379(017)	12250	102 A	282

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION

NOTEBOOKS

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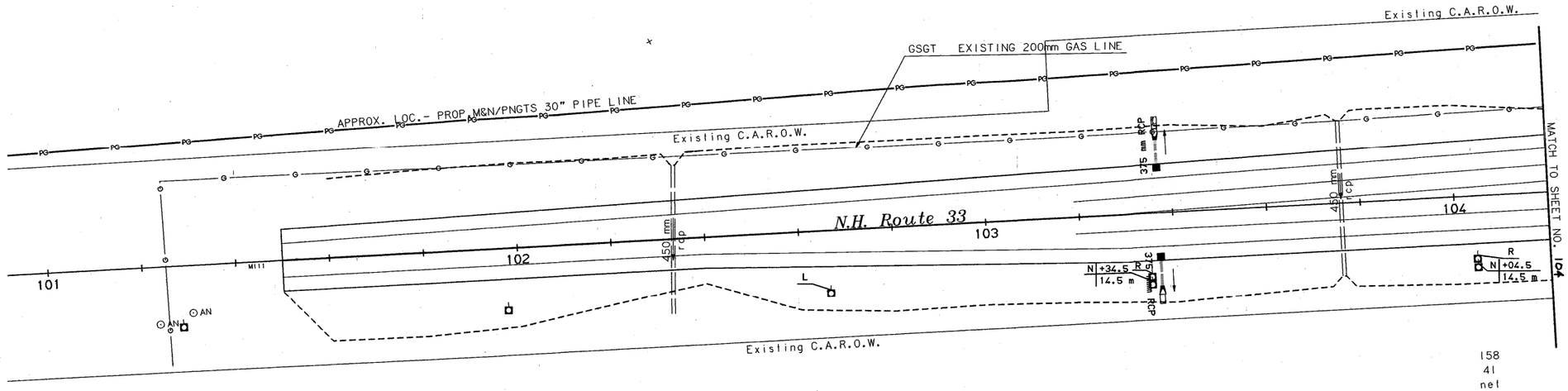
BOOK		PAGE
BOOK		PAGE

EXISTING DETAIL		DATE
PROPOSED DESIGN		DATE
SHEET CHECKED	J. KIROUAC, A. KING	DATE 8/98
CADD PLOT	E. RICHARDSON, J.HEBERT	DATE 8/98
AS BUILT DETAILS		DATE



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SCALE IN METERS

METRIC

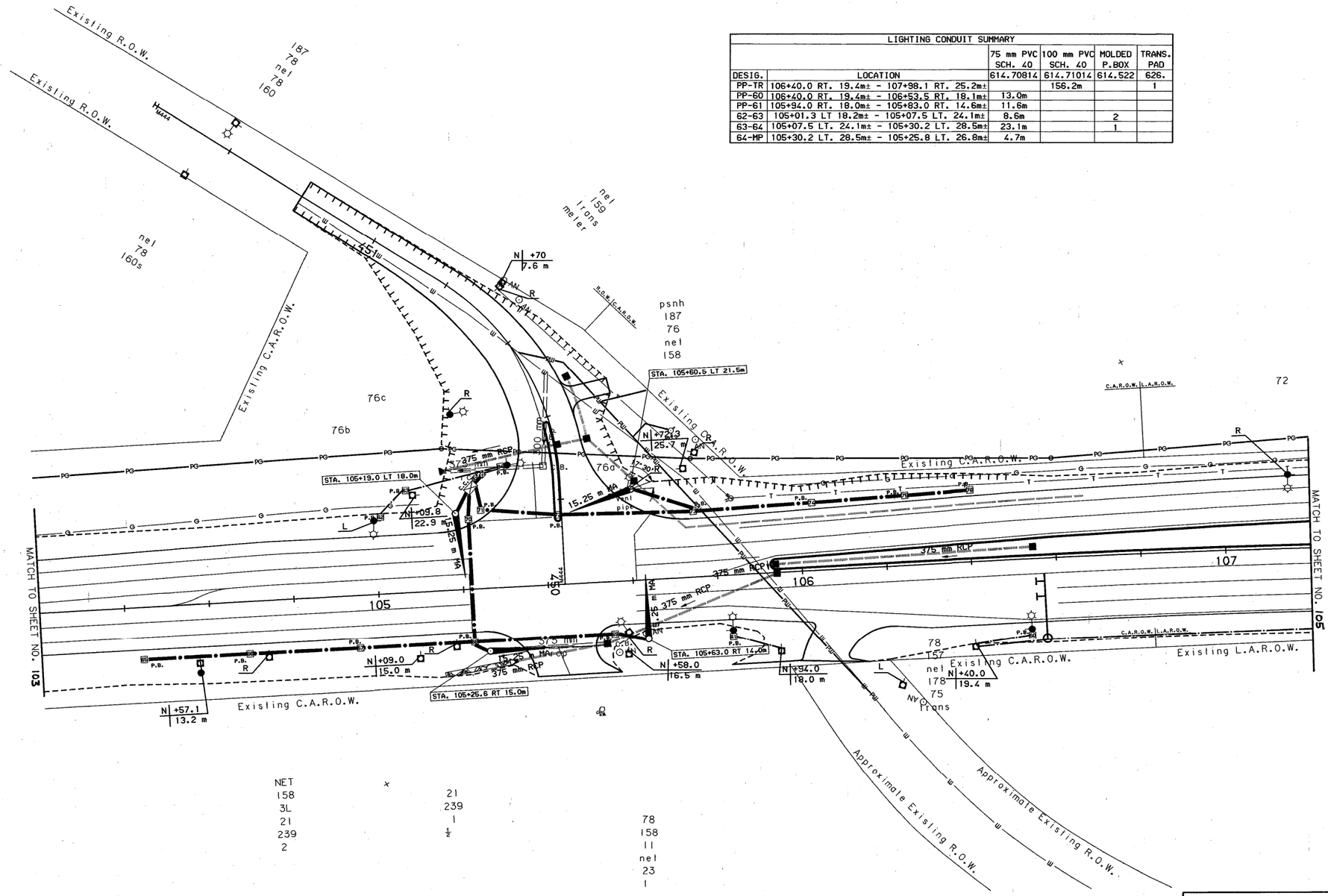
STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

UTILITY PLANS

MULTIPLOT NAME	*.FGB FILE NAME	DRAWING NAME	WINDOW NAME	SHEET SCALE	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
	ASSEMBLER	SHEET01	UTLSH01	1:500	CM-5379(017)	12250	103	282

LIGHTING CONDUIT SUMMARY					
		75 mm PVC SCH. 40	100 mm PVC SCH. 40	MOLDED P.BOX	TRANS. PAD
DESIG.	LOCATION	614.70814	614.71014	614.522	626.
PP-TR	106+40.0 RT. 19.4m± - 107+98.1 RT. 25.2m±		156.2m		1
PP-60	106+40.0 RT. 19.4m± - 106+53.5 RT. 18.1m±	13.0m			
PP-61	105+94.0 RT. 18.0m± - 105+83.0 RT. 14.6m±	11.6m			
62-63	105+01.3 LT 18.2m± - 105+07.5 LT. 24.1m±	8.6m		2	
63-64	105+07.5 LT. 24.1m± - 105+30.2 LT. 28.5m±	23.1m		1	
64-MP	105+30.2 LT. 28.5m± - 105+25.8 LT. 26.8m±	4.7m			



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SCALE IN METERS

METRIC

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

UTILITY PLANS

MULTIPLOT NAME	*.FGB FILE NAME	DRAWING NAME	WINDOW NAME	SHEET SCALE	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
	ASSEMBLER	SHEET02	UTLSH02	1:500	CM-5379(017)	12250	104	282

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	DESCRIPTION

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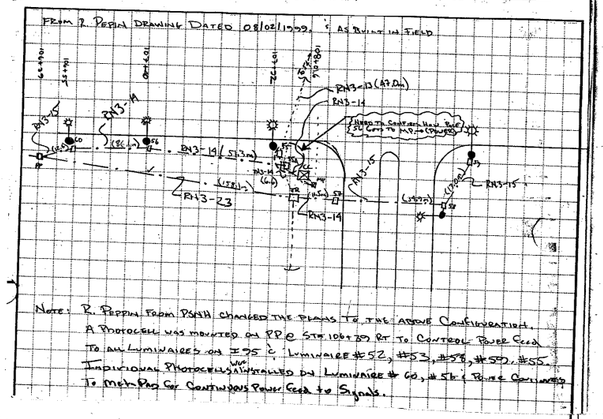
BOOK		PAGE

EXISTING DETAIL	DATE	
PROPOSED DESIGN	DATE	
SHEET CHECKED	J. KIRQUAC, A. KING	DATE 8/98
CADD PLOT	E. RICHARDSON, J. HEBERT	DATE 8/98
AS BUILT DETAILS		DATE

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION
CONSTRUCTION BUREAU
CALCULATION FOR _____

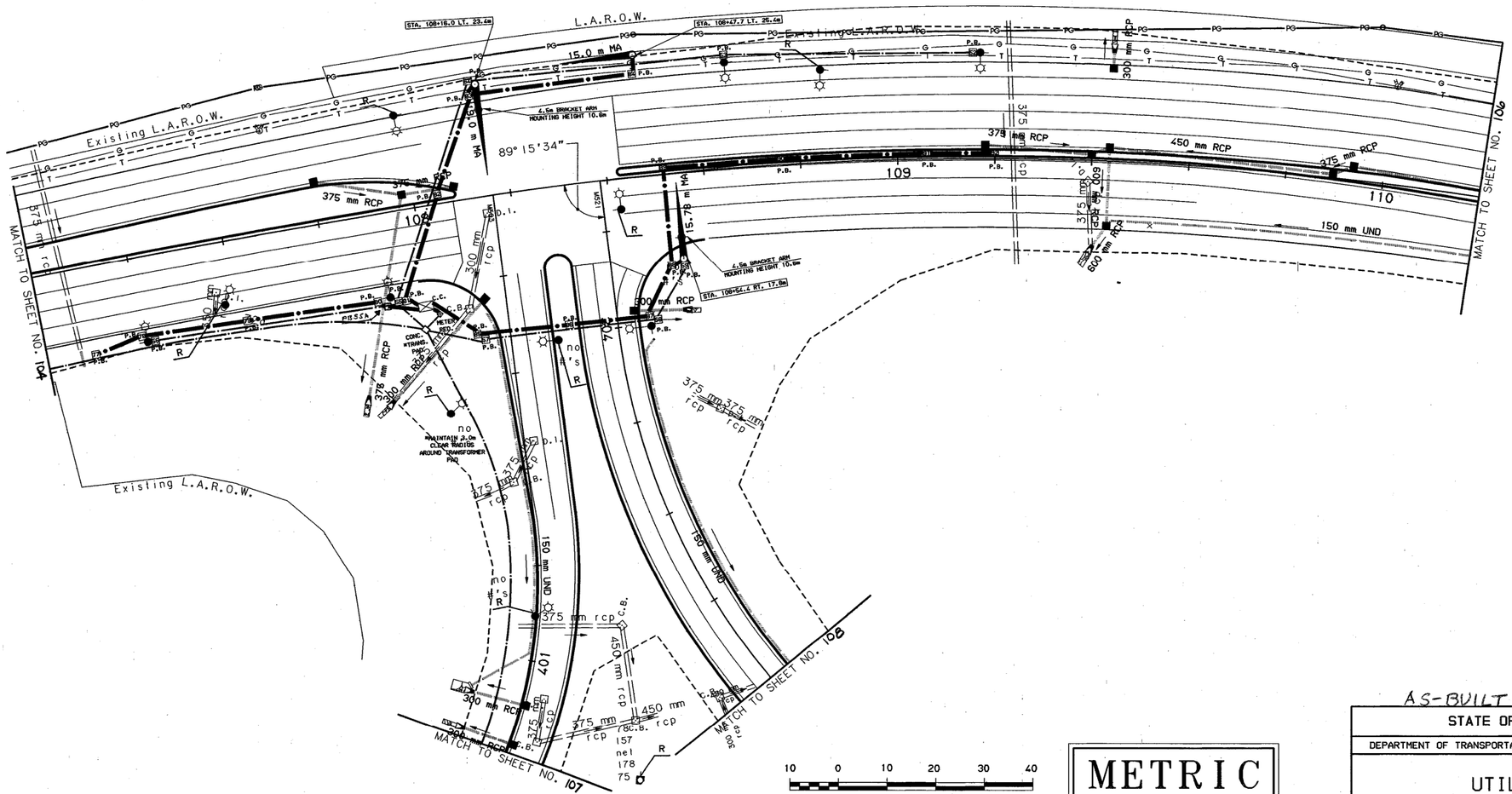
Pg. No. _____
PROJECT Portsmouth 12250
MADE BY PCrouch DATE 11/100
CHKD BY _____ DATE _____



LIGHTING CONDUIT SUMMARY

DESIG.	LOCATION	75 mm PVC SCH. 40 614.70814	75 mm 2-D SCH. 40 614.70824	75 mm 2-D SCH. 80 614.70828	MOLDED P.BOX 614.522	CONC. P.BOX 614.515	100 mm PVC SCH. 40 614.71014	TRANS PAD 626.	75mm STEEL CONDUIT 614.308
52-53	109+15.5 LT. 22.0m± - 108+65.8 LT. 23.6m±	51.4m			2				
53-54	108+65.8 LT. 23.6m± - 108+14.7 LT. 24.2m±	53.0m			1				
54-55	108+14.7 LT. 24.2m± - 107+93.5 RT. 18.6m±			47.8m	1				
55-56	107+93.5 RT. 18.6m± - 107+42.6 RT. 17.6m±		51.0m		1				
55-TR	107+93.5 RT. 18.6m± - 107+98.1 RT. 25.2m±	8.0m							
TR-MP	107+98.1 RT. 25.2m± - 108+01.6 RT. 22.5m±	4.3m							
TR-57	107+98.1 RT. 25.2m± - 108+10.1 RT. 29.2m±	12.5m			1				
57-58	108+10.1 RT. 29.2m± - 108+47.3 RT. 29.7m±			37.2m	1				
58-59	108+47.3 RT. 29.7m± - 108+54.3 RT. 19.3m±	12.3m			1				
PP-TR	106+40.0 RT. 19.4m± - 107+98.1 RT. 25.2m±						156.2m	1	
TR-X	107+98.1 RT. 25.2m± - 401+40.0 RT. 5.5m±				729	1	108.5m		4.50
60-56	106+55.6 RT 18.0m ± - 107+40 RT 18.0 ±	86.6							

72



METRIC

AS-BUILT PLANS

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

UTILITY PLANS

MULTIPLOT NAME	*.FGB FILE NAME	DRAWING NAME	WINDOW NAME	SHEET SCALE	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
	ASSEMBLER	SHEET03	UTLSH03	1:500	CM-5379(017)	12250	105	282

REVISIONS AFTER PROPOSAL

NUMBER	DESCRIPTION	STATION	STATION	DATE

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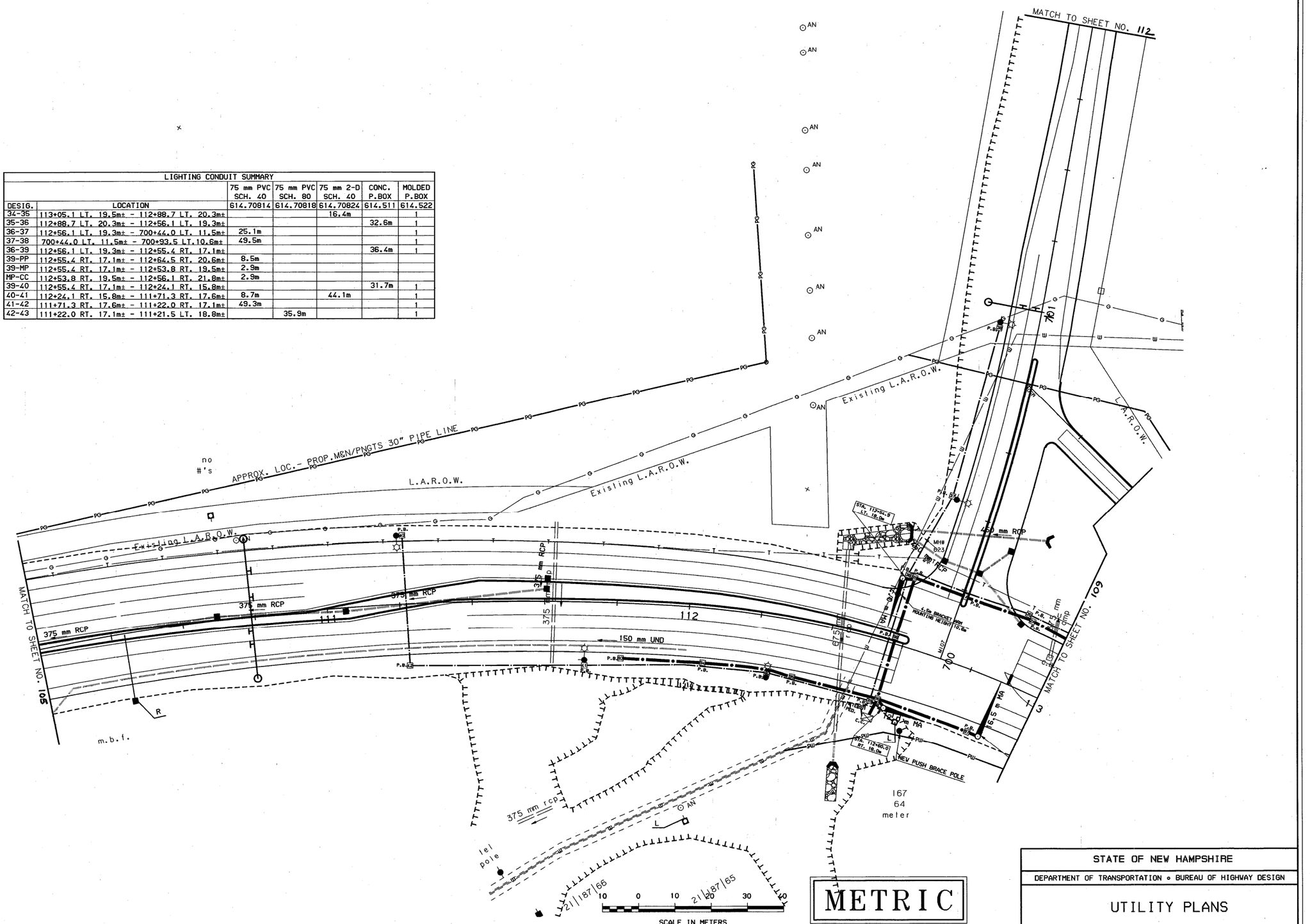
	BOOK	PAGE

	DATE
EXISTING DETAIL	
PROPOSED DESIGN	DATE
SHEET CHECKED J. KIROUAC, A. KING	DATE 8/98
CADD PLOT E. RICHARDSON, J. HEBERT	DATE 8/98
AS BUILT DETAILS	DATE

LIGHTING CONDUIT SUMMARY							
		75 mm PVC SCH. 40	75 mm PVC SCH. 80	75 mm 2-D SCH. 40	CONC. P.BOX	MOLDED P.BOX
DESIG.	LOCATION	614.70814	614.70818	614.70824	614.511	614.522
34-35	113+05.1 LT. 19.5m± - 112+88.7 LT. 20.3m±			16.4m		1
35-36	112+88.7 LT. 20.3m± - 112+56.1 LT. 19.3m±				32.6m	1
36-37	112+56.1 LT. 19.3m± - 700+44.0 LT. 11.5m±	25.1m				1
37-38	700+44.0 LT. 11.5m± - 700+93.5 LT.10.6m±	49.5m				1
36-39	112+56.1 LT. 19.3m± - 112+55.4 RT. 17.1m±				36.4m	1
39-PP	112+55.4 RT. 17.1m± - 112+64.5 RT. 20.6m±	8.5m				
39-MP	112+55.4 RT. 17.1m± - 112+53.8 RT. 19.5m±	2.9m				
MP-CC	112+53.8 RT. 19.5m± - 112+56.1 RT. 21.8m±	2.9m				
39-40	112+55.4 RT. 17.1m± - 112+24.1 RT. 15.8m±				31.7m	1
40-41	112+24.1 RT. 15.8m± - 111+71.3 RT. 17.6m±	8.7m		44.1m		1
41-42	111+71.3 RT. 17.6m± - 111+22.0 RT. 17.1m±	49.3m				1
42-43	111+22.0 RT. 17.1m± - 111+21.5 LT. 18.8m±		35.9m			1



METRIC

REVISIONS AFTER PROPOSAL			
NUMBER	DESCRIPTION	STATION	DATE

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EXISTING DETAIL		DATE
PROPOSED DESIGN		DATE
SHEET CHECKED	J. KIROUAC, A. KING	DATE 8/98
CADD PLOT	E. RICHARDSON, J.HEBERT	DATE 8/98
AS BUILT DETAILS		DATE

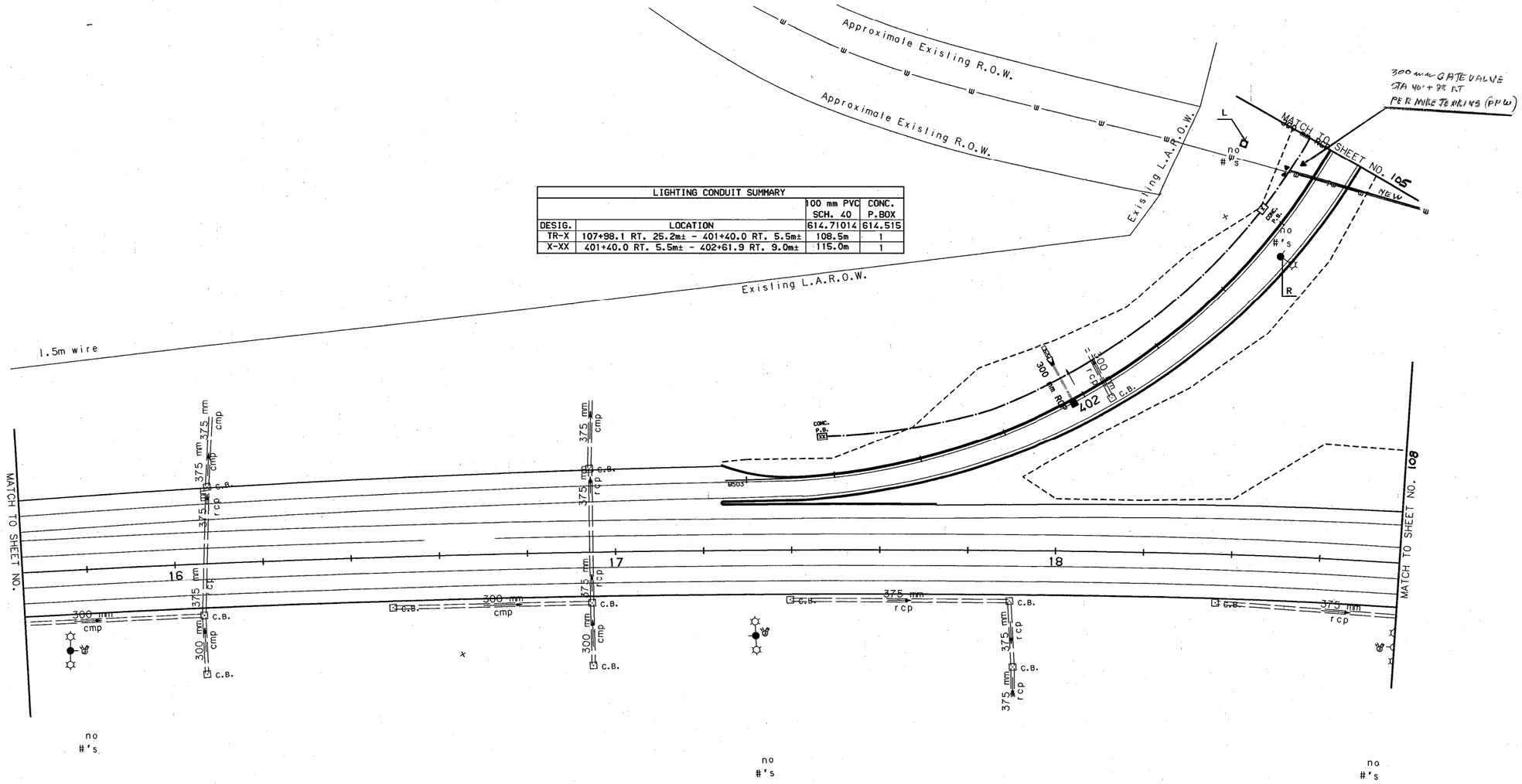
STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF HIGHWAY DESIGN

UTILITY PLANS

MULTIPLOT NAME	*.FGB FILE NAME	DRAWING NAME	WINDOW NAME	SHEET SCALE	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
	ASSEMBLER	SHEET04	UTLSH04	1:500	CM-5379(017)	12250	106	282

LIGHTING CONDUIT SUMMARY			
		100 mm PVC SCH. 40	CONC. P.BOX
DESIG.	LOCATION	614.71014	614.515
TR-X	107+98.1 RT. 25.2m± - 401+40.0 RT. 5.5m±	108.5m	1
X-XX	401+40.0 RT. 5.5m± - 402+61.9 RT. 9.0m±	115.0m	1



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SCALE IN METERS

METRIC

AS-BUILT PLANS

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

UTILITY PLANS

MULTIPLOT NAME	*.FGB FILE NAME	DRAWING NAME	WINDOW NAME	SHEET SCALE
	ASSEMBLER	SHEET06	UTLSH06	1:500

FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
CM-5379(017)	12250	107	282

REVISIONS AFTER PROPOSAL

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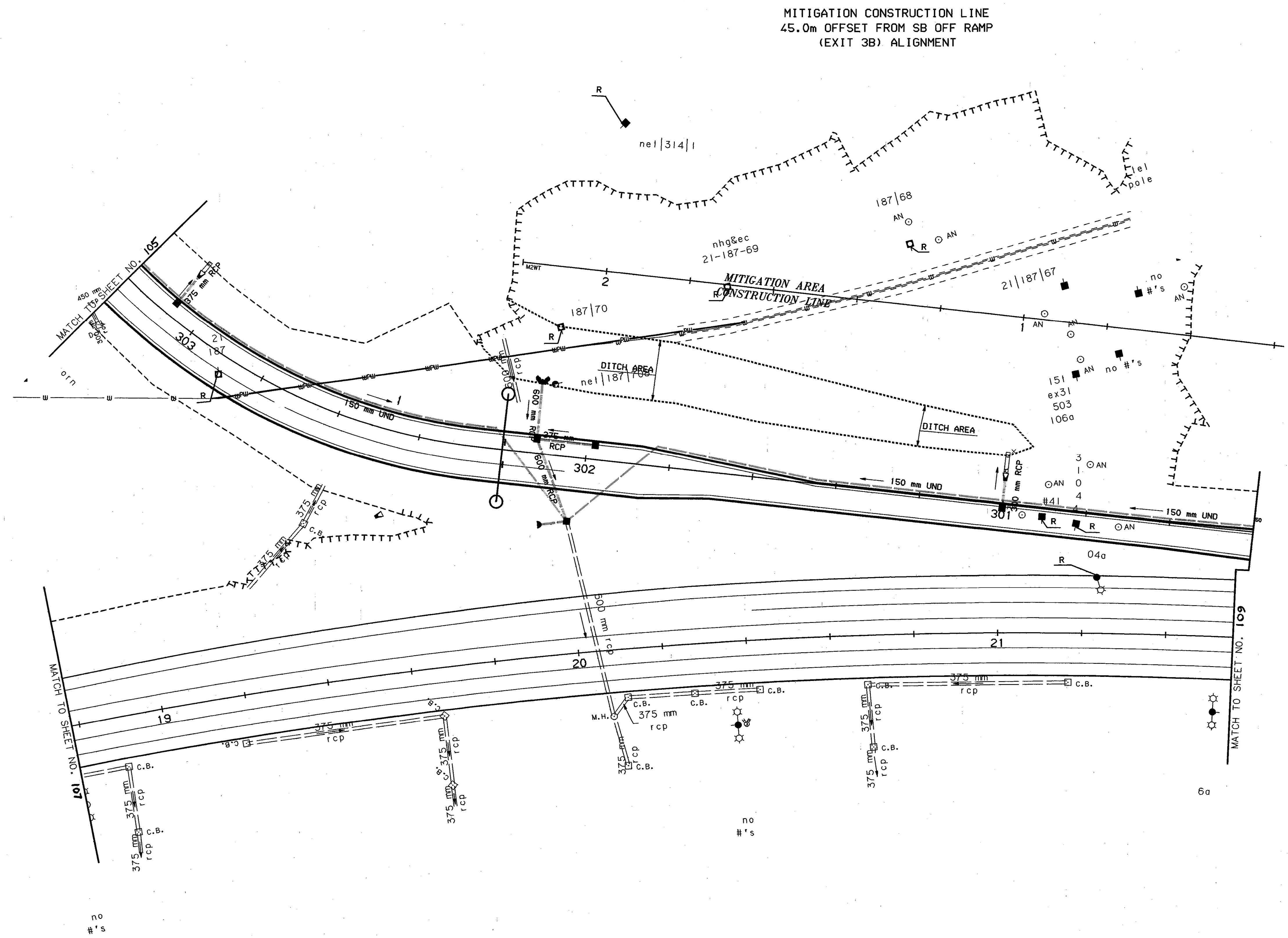
SHEET CHECKED	J. KIROUAC, A. KING DATE 8/98
CADD PLOT	E. RICHARDSON, J.HEBERT DATE 8/98
AS BUILT DETAILS	DATE



10 0 10 20 30 40
SCALE IN METERS

METRIC

MULTIPLOT NAME	*.FGB FILE NAME	DRAWING NAME	WINDOW NAME	SHEET SCALE
	ASSEMBLER	SHEET07	UTLSH07	1:500

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

UTILITY PLANS

FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
CM-5379(017)	12250	108	282

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION

NOTEBOOKS

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EXISTING DETAIL		DATE
PROPOSED DESIGN	J. KIROUAC, A. KING	DATE
SHEET CHECKED		DATE 8/98
CADD PLOT	E. RICHARDSON, J.HEBERT	DATE 8/98
AS BUILT DETAILS		DATE

REVISIONS AFTER PROPOSAL			
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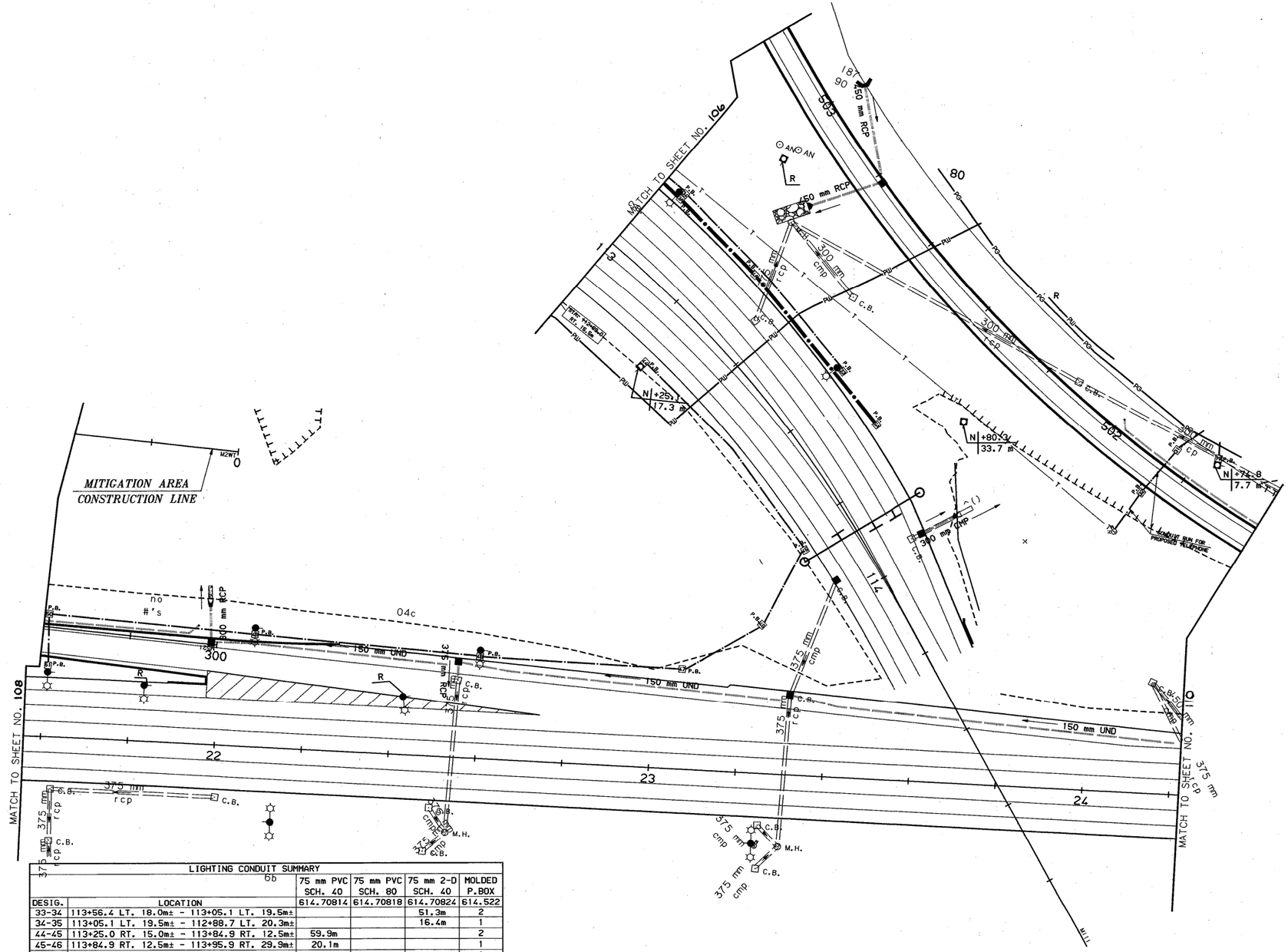
CADD PLOT E. RICHARDSON, J.HEBERT	DATE 8/98
AS BUILT DETAILS	DATE



LIGHTING CONDUIT SUMMARY						
		6b	75 mm PVC SCH. 40	75 mm PVC SCH. 80	75 mm 2-D SCH. 40	MOLDED P.BOX
DESIG.	LOCATION		614.70814	614.70818	614.70824	614.522
33-34	113+56.4 LT. 18.0m± - 113+05.1 LT. 19.5m±				51.3m	2
34-35	113+05.1 LT. 19.5m± - 112+88.7 LT. 20.3m±				16.4m	1
44-45	113+25.0 RT. 15.0m± - 113+84.9 RT. 12.5m±		59.9m			2
45-46	113+84.9 RT. 12.5m± - 113+95.9 RT. 29.9m±		20.1m			1
46-47	113+95.9 RT. 29.9m± - 23+06.6 LT. 23.2m±		21.0m			1
47-48	23+06.6 LT. 23.2m± - 22+60.0 LT. 23.6m±		46.6m			1
48-49	22+60.0 LT. 23.6m± - 22+08.0 LT. 26.1m±		52.0m			1
49-50	22+08.0 LT. 26.1m± - 300+39.0 RT. 3.0m±		47.5m			1
50-51	300+39.0 RT. 3.0m± - 300+38.1 LT. 8.8m±			11.9m		1
	(TELEPHONE CONDUIT)					1
MH-32	501+85.7 LT. 18.8m± - 501+86.1 LT. 7.9m±		10.9m			1
32-31	501+86.1 LT. 7.9m± - 501+85.3 RT. 4.8m±			12.7m		1
31-30	501+85.3 RT. 4.8m± - 501+81.0 RT. 16.9m±		12.8m			1

no #'s

10 0 10 20 30 40

SCALE IN METERS

METRIC

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF HIGHWAY DESIGN

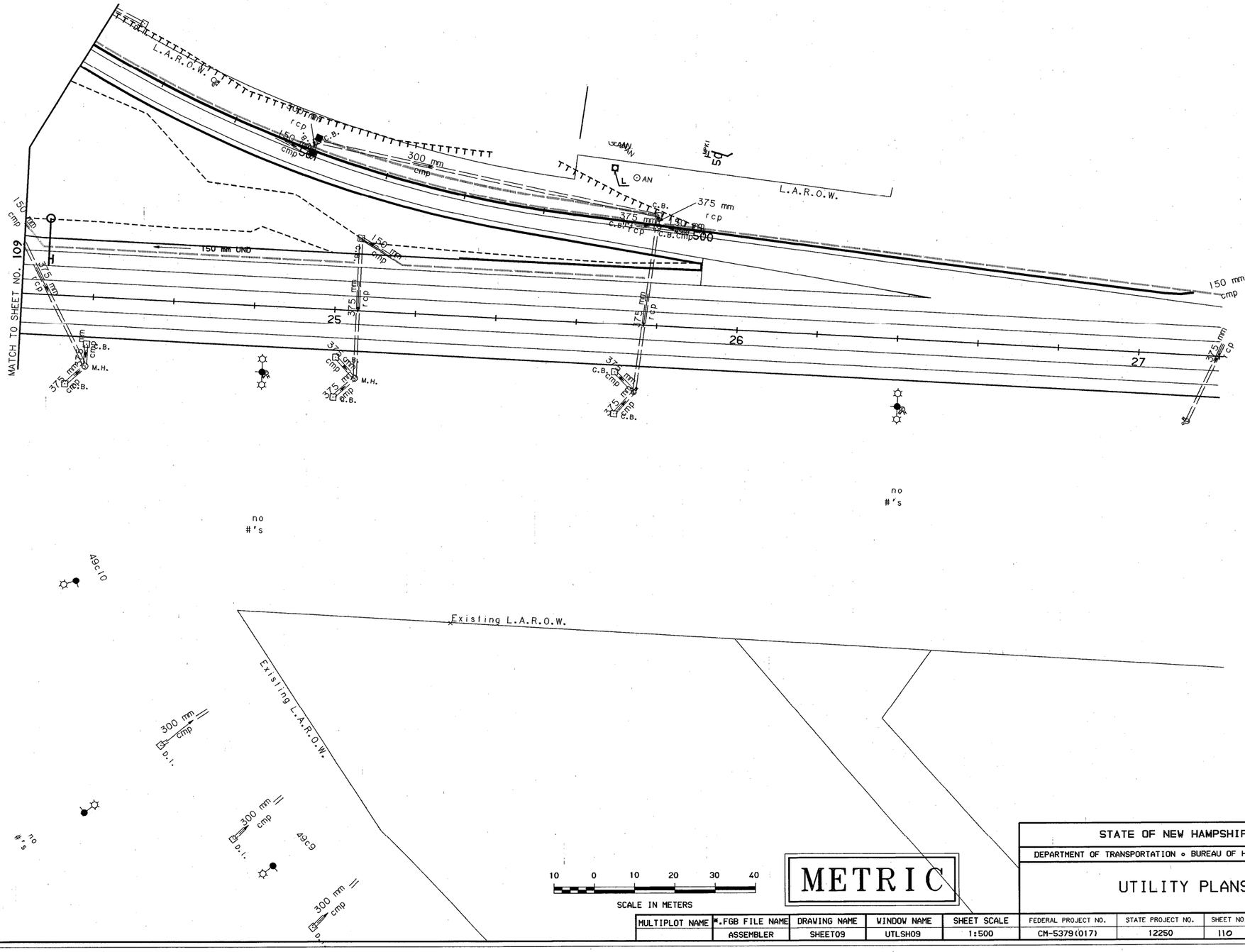
UTILITY PLANS

MULTIPLOT NAME	*.FGB FILE NAME	DRAWING NAME	WINDOW NAME	SHEET SCALE	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
	ASSEMBLER	SHEET08	UTLSH08	1:500	CM-5379(017)	12250	109	282

REVISIONS AFTER PROPOSAL			
NUMBER	DATE	STATION	DESCRIPTION

NOTEBOOKS		
BOOK		PAGE
BOOK		PAGE
BOOK		PAGE

EXISTING DETAIL	DATE
PROPOSED DESIGN	DATE
SHEET CHECKED J. KIROUAC, A. KING	DATE 8/98
CADD PLOT E. RICHARDSON, J.HEBERT	DATE 8/98
AS BUILT DETAILS	DATE



METRIC

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF HIGHWAY DESIGN

UTILITY PLANS

MULTIPLOT NAME	*.FGB FILE NAME	DRAWING NAME	WINDOW NAME	SHEET SCALE	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
	ASSEMBLER	SHEET09	UTLSH09	1:500	CM-5379(017)	12250	110	282

REVISIONS AFTER PROPOSAL				
NUMBER	DESCRIPTION	STATION	STATION	DATE

NOTEBOOKS			
	BOOK	PAGE	
J. KIROUAC, A. KING	BOOK	PAGE	
E. RICHARDSON, J. HEBERT	BOOK	PAGE	

	DATE
EXISTING DETAIL	
PROPOSED DESIGN	DATE
SHEET CHECKED J. KIROUAC, A. KING	DATE 8/98
CADD PLOT E. RICHARDSON, J. HEBERT	DATE 8/98
AS BUILT DETAILS	DATE

ADDITIONAL LIGHTING CONDUIT SUMMARY

DESIG.	LOCATION	614.522	614.70818	614.70528	614.511	614.70819 125.25
AA-DD	81+49 RT 4.5m² - 82+46.0 RT 3.5m²	1				
AA-BB	81+49 RT 4.5m² - 81+53.5 LT 280m²	1				
BB-CC	81+53.5 LT 280m² - 81+58.5 LT 40.0m²				1	
CC-AA	81+42.0 RT 19.7m² - 81+49 RT 4.5m²					37.9m 1.0
25-25A	82+49.3 RT 19.9m² - 351+51.5 RT 7.0m²	1				
16A-28	80+51 RT 260m² - 81+	1	95.7m			

LIGHTING CONDUIT SUMMARY

DESIG.	LOCATION	614.70814	614.70818	614.70528	614.511	614.522
6-8	63+10.3 RT. 8.0m± - 63+35.7 RT. 8.7m±		25.7m			1
7-8	63+43.6 RT. 23.0m± - 63+35.7 RT. 8.7m±		16.9m			1
8-9	63+35.7 RT. 8.7m± - 63+27.3 LT. 6.1m±		17.2m			1
8-11	63+35.7 RT. 8.7m± - 63+96.2 RT. 20.9m±		67.9m			1
10-11	8+85.2 RT. 0.5m± - 63+96.2 RT. 20.9m±		19.0m			1
11-12	63+96.2 RT. 20.9m± - 64+13.6 LT. 5.8m±		24.4m			1
11-14	63+96.2 RT. 20.9m± - 8+23.6 RT. 28.5m±		81.8m			1
13-14	8+20.8 LT. 17.9m± - 8+23.6 RT. 28.5m±		46.5m			1
14-15	8+23.6 RT. 28.5m± - 80+67.4 RT. 15.5m±		39.6m			1
16-15	80+50.1 RT. 25.5m± - 80+67.4 RT. 15.5m±		20.1m			1
15-17	80+67.4 RT. 15.5m± - 501+76.2 RT. 8.8m±		38.0m			1
15-18	80+67.4 RT. 15.5m± - 81+05.5 RT. 13.6m±		38.1m			1
18-20	81+05.5 RT. 13.6m± - 81+32.8 LT. 22.6m±		45.3m			1
20-19	81+32.8 LT. 22.6m± - 64+61.6 RT. 5.7m±		301.8m			1
20-21	81+32.8 LT. 22.6m± - 64+98.8 RT. 9.9m±		17.3m			1
21-22	64+98.8 RT. 9.9m± - 65+37.1 RT. 7.1m±		40.3m			1
22-23	65+37.1 RT. 7.1m± - 65+54.5 RT. 6.8m±		17.4m			1
23-24	65+54.5 RT. 6.8m± - 82+48.0 LT. 15.2m±		43.5m			1
24-25	82+48.0 LT. 15.2m± - 82+49.3 RT. 14.4m±		29.6m			1
	(MISCELLANEOUS CONDUIT)					
PP-26	501+05.8 RT. 29.3m± - 81+43.6 RT. 20.5m±		29.4m		1	1
PP-27	501+05.8 RT. 29.3m± - 81+42.1 RT. 19.1m±		30.7m			1
28-29	80+86.4 RT. 29.5m± - 81+42.1 RT. 17.6m±		56.9m			1
29-30	501+81.0 RT. 16.9m± -80+86.4 RT. 29.5m±		20.2m			1
30-31	501+85.3 RT. 4.8m± - 501+81.0 RT. 16.9m±	12.8m				
16-UR	80+50.1 RT. 25.5m± - 81+44.7 RT. 21.7m±			94.0m		

ITEM 625.55 - ORNAMENTAL LIGHT POLE
10.5m MOUNTING HEIGHT

MATCH TO SHEET NO. 112

MATCH TO SHEET NO.

750 mm RCP

750 mm RCP

300 mm rcp

Existing L.A.R.O.W.

R=122.7m

R.O.W.

CONTD. ON SHEET 109
1-50mm ø UNDERDRAIN
SCHEDULE 40 @ NON-ROAD CROSSINGS
SCHEDULE 80 @ ROAD CROSSINGS

ADD PB16A TO SEPARATE POWER FROM FIRE AND SECURITY LINES

PHONE & FIRE IN SAME TRENCH FROM 16-TMH FIRE ONLY FROM PB16 (NOT PHONE) PB ADDED @ PB16 TO SEPARATE FIRE & SECURITY FROM ELECTRIC.

CONDUIT RUN FOR RADIO, FIRE ALARM BOX, ANTENNA AND SECURITY CAMERA

CONDUIT RUN FOR PROPOSED TELEPHONE

CONDUIT RUN FOR PROPOSED CATV
CONDUIT RUN FOR PROPOSED ELECTRICAL

CONDUIT RUN FOR PROPOSED TELEPHONE EQUIPMENTS (SEE SHEET 109)

POWER POLE

NEW 35' ORNAMENTAL POLE ITEM 625.55

PB35A

10 0 10 20 30 40
SCALE IN METERS

METRIC

AS-BUILT PLANS

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

UTILITY PLANS

MULTIPLOT NAME	*.FGB FILE NAME	DRAWING NAME	WINDOW NAME	SHEET SCALE	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
	ASSEMBLER	SHEET10	UTLSH10	1:500	CM-5379(017)	12250	111	282

LIGHTING CONDUIT SUMMARY				
		75 mm PVC SCH. 40	75 mm PVC SCH. 80	MOLD. P.BOX
DESIG.	LOCATION	614.70814	614.70818	614.522
1-2	61+38.0 LT. 11.5m± - 61+85.5 LT. 7.0m±		47.8m	2
2-3	61+85.5 LT. 7.0m± - 61+85.5 RT. 8.0m±		15.1m	1
3-4	61+85.5 RT. 8.0m± - 61+76.7 RT. 22.0m±	16.2m		1
3-5	61+85.5 RT. 8.0m± - 62+49.0 RT. 8.0m±	58.5m		1
5-6	62+49.0 RT. 8.0m± - 63+10.3 RT. 8.0m±	59.6m		1
6-8	63+10.3 RT. 8.0m± - 63+35.7 RT. 8.7m±		25.7m	1

STA. 60+74.0 LT 3.0m - 62+17.5 LT 6.5m
REPLACE 143.5m X 150mm TRANSITE WATER WITH ITEM 611.6115, 150mm PLASTIC PRESSURE WATER PIPE

TRANSITION COUPLINGS ARE SUBSIDIARY TO ITEM 611.6115

ELIMINATED (SEE ON 6-16)
NO INTERFERENCE WITH EXIST. DRAINAGE & CONDUIT RUNS

ITEM 625.52 - LIGHT POLE (HIGHWAY) 7.5m MOUNTING HEIGHT W/ 1.8m BRACKET ARM

ITEM 625.52 - LIGHT POLE (HIGHWAY) 7.5m MOUNTING HEIGHT W/ 1.8m BRACKET ARM

MATCH TO SHEET NO. 106

MATCH TO SHEET NO. 111

MATCH TO SHEET NO.

MATCH TO SHEET NO.

450 mm cmp

609 mm RCP

375 mm RCP

R=112m

R.O.W.

R.O.W.

M118

P.O.B.

GRID N

SCALE IN METERS 10 0 10 20 30 40

METRIC

AS-BUILT PLANS

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

UTILITY PLANS

MULTIPLOT NAME	*.FGB FILE NAME	DRAWING NAME	WINDOW NAME	SHEET SCALE	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
	ASSEMBLER	SHEET11	UTLSH11	1:500	CM-5379(017)	12250	112	282

REVISIONS AFTER PROPOSAL

NUMBER	DESCRIPTION	STATION	STATION	DATE

NOTEBOOKS

BOOK		PAGE
BOOK		PAGE
BOOK		PAGE

EXISTING DETAIL		DATE
PROPOSED DESIGN		DATE
SHEET CHECKED	J. KIROUAC, A. KING	DATE 8/98
CADD PLOT	E. RICHARDSON, J.HEBERT	DATE 8/98
AS BUILT DETAILS		DATE

REVISIONS AFTER PROPOSAL			
NUMBER	DATE	STATION	DESCRIPTION

NOTEBOOKS		
BOOK		PAGE
BOOK		PAGE
BOOK		PAGE

EXISTING DETAIL		DATE
PROPOSED DESIGN		DATE
SHEET CHECKED	J. KIROUAC, A. KING	DATE 8/98
CADD PLOT	E. RICHARDSON, J.HEBERT	DATE 8/98
AS BUILT DETAILS		DATE

TO HAVEN WELL

MATCH TO SHEET NO.

PROPOSED BERM LOCATION

450mm RCP

708 709 710

psnh 432b 5 6 95b 2 nel

5 nel 21-239-1

95q 95b psnh 432a 4 95 25 nel

psnh 432a 4

psnh 432b 4

#8|8

psnh 432a 3

psnh 432 16c 24 nel

95-24 psnh 432 16c

9 9 psnh 432b 2

psnh 432a 2

psnh 432 16b nel 23

psnh|432|16a1

psnh 432 16a 95 nex 22

#40-n-6

#2-40-n5

#10

#4-40-n4

#2-40-n-7

#4-40-N3

#4-40-n-8

no #'s

#432 16a

#4-40-n-20

Vent pipe

wood utility pole

nel 26

psnh 432a

AN

SCALE IN METRIC

10 0 10 20 30 40

MULTIPLOT NAME	*.FGB FILE NAME	DRAWING NAME	WINDOW NAME	SHEET SCALE	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
	ASSEMBLER	SHEET14	UTLSH14	1:500	CM-5379(017)	12250	113	282

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

UTILITY PLANS

METRIC

5 0 5 10 15 20

SCALE IN METERS

ITEM 616.101 - TRAFFIC SIGNALS
NH 33 AND GREENLAND ROAD

Bnd. Existing

GRID N

BRING LOOP FOR RIGHT TURN BACK TO CABINET ON SEPERATE BELDIN. DO NOT TERMINATE IN CABINET

1.80m X 15.25m LOOP 2-4-2 TURNS. CONNECT TO PHASE 8 DETECTOR 1

Greenland Road

STA. 105+60.5 LT 21.5m

Existing C.A.R.O.W.

STA. 105+19.0 LT 18.0m

Bnd

P.B. 63

P.B. 62

C.B. MA

CAS AS-BUILT

N +09.8 22.9 m

15.25 m MA

OPTICOM

17° 30'

Vent pipe

N +72.3 25.7 m

MH# 626

P.B. 64 65 66 67 68 69 70 71 72 73 74 75 76

1.80m X 15.25m LOOP 2-4-2 TURNS. CONNECT TO PHASE 5 DETECTOR 1

ONLY

105

1.8m X 3.6m LOOP WITH 3 TURNS CONNECT TO PHASE 2 DETECTOR 2 SET DETECTOR 76m FROM STOP BAR

2 - 1.80m X 15.25m LOOPS 2-4-2 TURNS. CONNECT TO PHASE 2 DETECTOR 1

N.H. Route 33

MM4444

450

1.80m X 15.25m LOOP 2-4-2 TURNS. CONNECT TO PHASE 1 DETECTOR 1

OPTICOM

STROBE

15.25 m MA

2A

2 - 1.80m X 15.25m LOOPS 2-4-2 TURNS. CONNECT TO PHASE 6 DETECTOR 1

1.8m X 3.6m LOOP WITH 3 TURNS CONNECT TO PHASE 6 DETECTOR 2 SET DETECTOR 76m FROM STOP BAR

106

STA. 105+63.0 RT 14.0m

N +58.0 16.5 m

N +57.1 13.2 m

N +09.0 15.0 m

STA. 105+25.6 RT 15.0m

1.80m X 9.17m LOOP 2-4-2 TURNS. CONNECT TO PHASE 4 DETECTOR 1

N +94.0 18.0 m

N +40.0 19.4 m

Existing C.A.R.O.W. Bnd.

Existing C.A.

Exis ir

SIGNAL HEADS
305 mm LENSES
WITH LOUVERS
127 mm (NOMINAL) BACKPLATES

R Y G — 1,5

R Y G — 2A, 8, 4, 6A

R Y G — 2-6

GREENLAND RD

ROUTE 33

5 (10) 5 (15) — 5 (5) 5 (5) — 35 (45) 25 (35)

50 (65) 240 (320) — 950 (1300) 1200 (1940) — 40 (65) 40 (40)

5 (5) 5 (5) — 1010 (1155) 1820 (1660) — 55 (70) 55 (40)

50 (50) 35 (35) — 0 (0) 5 (5) — 5 (5) 15 15

40 (45) 30 (30)

TRAFFIC DATA

PULLBOX LOCATION

ITEM # 614.511

65	104+44.0 RT 12.5m	72	105+43.0 LT. 16.5m	63	105+31.5 LT 38.6m
66	104+69.0 RT. 12.5m	73	105+75.0 LT. 15.5m	69	105+01 LT 18.5m
67	104+95.0 RT. 12.5m	74	106+03.0 LT. 16.0m		
68	105+22.0 RT. 12.5m	75	106+25.0 LT. 16.5m		
69	105+55.0 RT. 12.5m	76	106+40.5 LT. 17.0m		
70	105+31.5 LT 16.7m / 105+22.0 LT. 16.5m	63	105+15 LT 38.6m		
71	105+33.3 LT 16.2m / 105+25.0 LT. 18.5m	69	105+35 LT 33.0m		

METER POST 105+20.3 LT 23.4m

C. CAB 105+33.7 LT 23.5m

CONDUIT SUMMARY
(75 mm PVC PLASTIC CONDUIT INC. SPEC. EX.)

BOX #'S	614.70814 SCH 40	614.70818 SCH 80	BOX #'S	614.70814 SCH 40	614.70818 SCH 80
65-66	25.0 m		CC-MP	~~4.1~~ m 3.0	
66-67	26.0 m		CC-71	~~7.4~~ m 8.7	
67-68	27.0 m		71-72		18.2 m
68-MA	4.3 m		72-73		31.9 m
68-69		33.1 m	73-MA	15.7 m	
69-MA	8.0 m		73-74	28.0 m	
68-70		29.0 m	74-75	22.0 m	
70-CC	~~7.4~~ m 9.2		75-76	15.5 m	
CC-MA	7.0 m				

* SEE UTILITY SHEETS FOR LIGHTING SUMMARY

DETECTOR SCHEDULE

DETECTOR STREET	DIRECTION	LANE	AMPLIFIER Ø	NO.	CHANNEL	INDUCT. U H	RESIST. OF LOOP	RESIST. LOOP TO GROUND (MEG OHMS)	RESIST. SHIELD TO GROUND (MEG OHMS)
NH 33	WB	RIGHT	6	1	1				
NH 33	WB	CENTER	6	1	1				
NH 33	WB	LEFT	1	1	1				
NH 33	WB	ADVANCE	6	2	1				
NH 33	EB	RIGHT	2	1	1				
NH 33	EB	CENTER	2	1	1				
NH 33	EB	LEFT	5	1	1				
NH 33	EB	ADVANCE	2	2	1				
GREENLAND RD	SB	RIGHT							
GREENLAND RD	SB	LEFT	8	1	1				
GAS STATION	EXIT	LEFT	4	1	1				

RECORD FIELD MEASUREMENTS ABOVE

SIGNAL PHASING

TIMING IN SECONDS	EXCLUSIVE PEDESTRIAN	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8	FLASH
	FUTURE			FUTURE				FUTURE		
INITIAL INTERVAL		5	5		5	5	5		5	
VEHICLE EXTENSION		4	4		4	4	4		4	
MAXIMUM I		15	35		15	15	35		15	
MAXIMUM II		15	35		15	15	35		15	
YELLOW		4	4		4	4	4		4	
ALL RED		2	2		2	2	2		2	
RECALL		OFF	SOFT		OFF	OFF	SOFT		OFF	
DETECTOR		NL	NL		NL	NL	NL		NL	

NOTE:
FIRE PRE.EMPT 1 CALL PHASE 1 AND 6
FIRE PRE.EMPT 2 CALL PHASE 2 AND PHASE 5
FIRE PRE.EMPT 3 CALL PHASE 8

AS-BUILT PLANS

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

SIGNALIZATION PLAN

MULTIPLOT NAME	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
SIGNAL1.DAT		P_SIGN	CM-5379(017)	12250	114	282

REVISIONS AFTER PROPOSAL

NUMBER	DESCRIPTION	DATE	STATION	STATION

NOTEBOOKS

BOOK	PAGE	
BOOK	PAGE	
BOOK	PAGE	

EXISTING DETAIL	DATE
PROPOSED DESIGN	DATE
SHEET CHECKED	DATE
CAD PLOT	E.RICHARDSON DATE 7/22/98
AS BUILT DETAILS	DATE

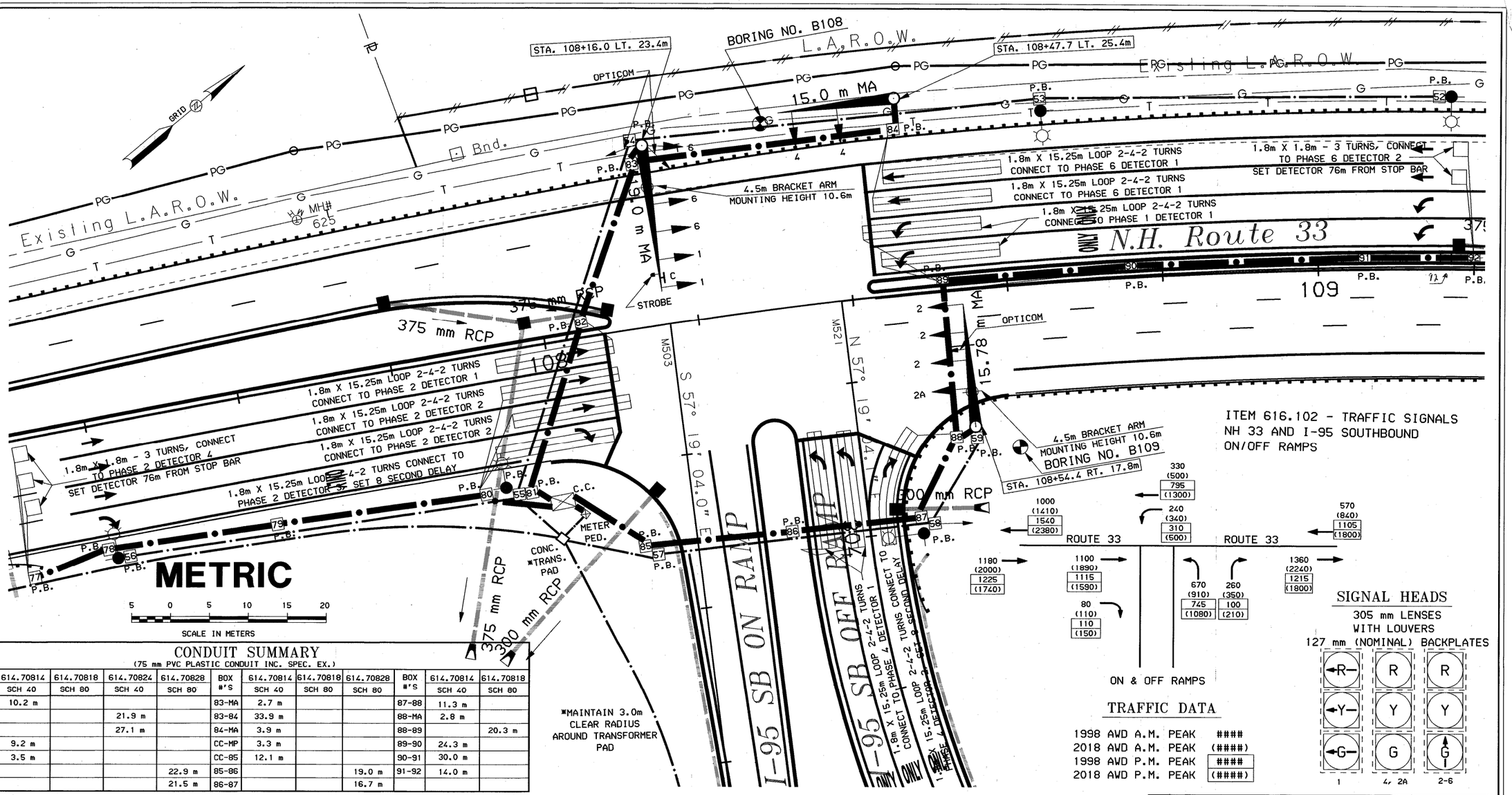
REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION

NOTEBOOKS

BOOK	PAGE	
BOOK	PAGE	
BOOK	PAGE	

EXISTING DETAIL	DATE
PROPOSED DESIGN	DATE
SHEET CHECKED	DATE
CADD PLOT	E.RICHARDSON DATE 8/20/98
AS BUILT DETAILS	DATE



ITEM 616.102 - TRAFFIC SIGNALS
NH 33 AND I-95 SOUTHBOUND
ON/OFF RAMPS

CONDUIT SUMMARY
(75 mm PVC PLASTIC CONDUIT INC. SPEC. EX.)

BOX #'S	614.70814 SCH 40	614.70818 SCH 80	614.70824 SCH 40	614.70828 SCH 80	BOX #'S	614.70814 SCH 40	614.70818 SCH 80	614.70828 SCH 80	BOX #'S	614.70814 SCH 40	614.70818 SCH 80
77-78	10.2 m				83-MA	2.7 m			87-88	11.3 m	
78-79			21.9 m		83-84	33.9 m			88-MA	2.8 m	
79-80			27.1 m		84-MA	3.9 m			88-89		20.3 m
80-CC	9.2 m				CC-MP	3.3 m			89-90	24.3 m	
CC-81	3.5 m				CC-85	12.1 m			90-91	30.0 m	
81-82				22.9 m	85-86			19.0 m	91-92	14.0 m	
82-83				21.5 m	86-87			16.7 m			

* SEE UTILITY SHEETS FOR LIGHTING CONDUIT SUMMARY

DETECTOR SCHEDULE

DETECTOR STREET	DIRECTION	LANE	AMPLIFIER Ø	NO.	CHANNEL	INDUCT. U H	RESIST. OF LOOP	RESIST. LOOP TO GROUND (MEG OHMS)	RESIST. SHIELD TO GROUND (MEG OHMS)
NH 33	WB	CALL	6	2	1				
NH 33	WB	THRU	6	1	1				
NH 33	WB	THRU	6	1	1				
NH 33	WB	LFT	1	1	1				
NH 33	WB	LFT	1	1	1				
NH 33	EB	CALL	2	4	1				
NH 33	EB	THRU	2	1	1				
NH 33	EB	THRU	2	2	1				
NH 33	EB	THRU	2	2	1				
NH 33	EB	RT	2	3	1				
I-95 SB OFF RAMP	NB	LFT	4	1	1				
I-95 SB OFF RAMP	NB	LFT	4	1	1				
I-95 SB OFF RAMP	NB	RT	4	2	1				
RECORD FIELD MEASUREMENTS ABOVE									

SIGNAL PHASING

TIMING IN SECONDS	EXCLUSIVE PEDESTRIAN	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8	FLASH
	FUTURE			FUTURE		FUTURE		FUTURE	FUTURE	Y RA R R
INITIAL INTERVAL		5	5		5		5			
VEHICLE EXTENSION		3	3		3		3			
MAXIMUM I		20	30		20		30			
MAXIMUM II		20	30		20		30			
YELLOW		4	4		4		4			
ALL RED		2	2		2		2			

NOTE: EXCLUSIVE PED Ø1
FIRE PRE.EMPT 1 CALL PHASE 1 AND PHASE 6
FIRE PRE.EMPT 2 CALL PHASE 2
FIRE PRE.EMPT 3 CALL PHASE 4

C SIGNS

NO TURN ON RED ARROW

1-R10-11c
762 mm x 610 mm

PULLBOX LOCATION

ITEM # 614.511

77	107+29.9 RT. 18.0m	83	108+14.5 LT. 21.2m	89	108+51.7 LT. 1.5m
78	107+40.0 RT. 16.2m	84	108+47.3 LT. 21.4m	90	108+75.9 LT. 1.5m
79	107+62.0 RT. 17.0m	85	108+09.0 RT. 27.9m	~~91~~	~~108+05.9 LT. 1.5m~~ *
80	107+89.3 RT. 17.9m	86	108+28.0 RT. 28.7m	~~92~~	~~108+20.0 LT. 1.5m~~
81	107+95.2 RT. 18.7m	87	108+45.7 RT. 28.7m	93	109+17.0 LT 1.5m
82	108+05.0 LT. 2.0m	88	108+51.3 RT. 18.9m		

* ELIMINATED

AS BUILT PLANS

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

SIGNALIZATION PLAN

MULTIPLOT NAME	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
SIGNAL2.DAT		P_SIGN	CM-5379(017)	12250	115	282

SIGNAL PHASING

TIMING IN SECONDS	EXCLUSIVE PEDESTRIAN	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8	FLASH
	FUTURE	FUTURE	→ →	FUTURE	FUTURE	↙	← ←	FUTURE	↖ ↖	R Y R RA LA Y
INITIAL INTERVAL			5			5	5		5	
VEHICLE EXTENSION			③ AW			3	3		3	
MAXIMUM I			35			20	35		20	
MAXIMUM II			35			20	35		20	
YELLOW			4			4	4		4	
ALL RED			2			2	2		2	
RECALL			SOFT			OFF	SOFT		OFF	
DETECTOR			NL			NL	NL		NL	

NOTE:
FIRE PRE.EMPT 1 CALL PHASE 6
FIRE PRE.EMPT 2 CALL PHASE 2 AND PHASE 5
FIRE PRE.EMPT 3 CALL PHASE 8

C
SIGNS

NO TURN ON RED ARROW

1-R10-11c
762 mm x 610 mm

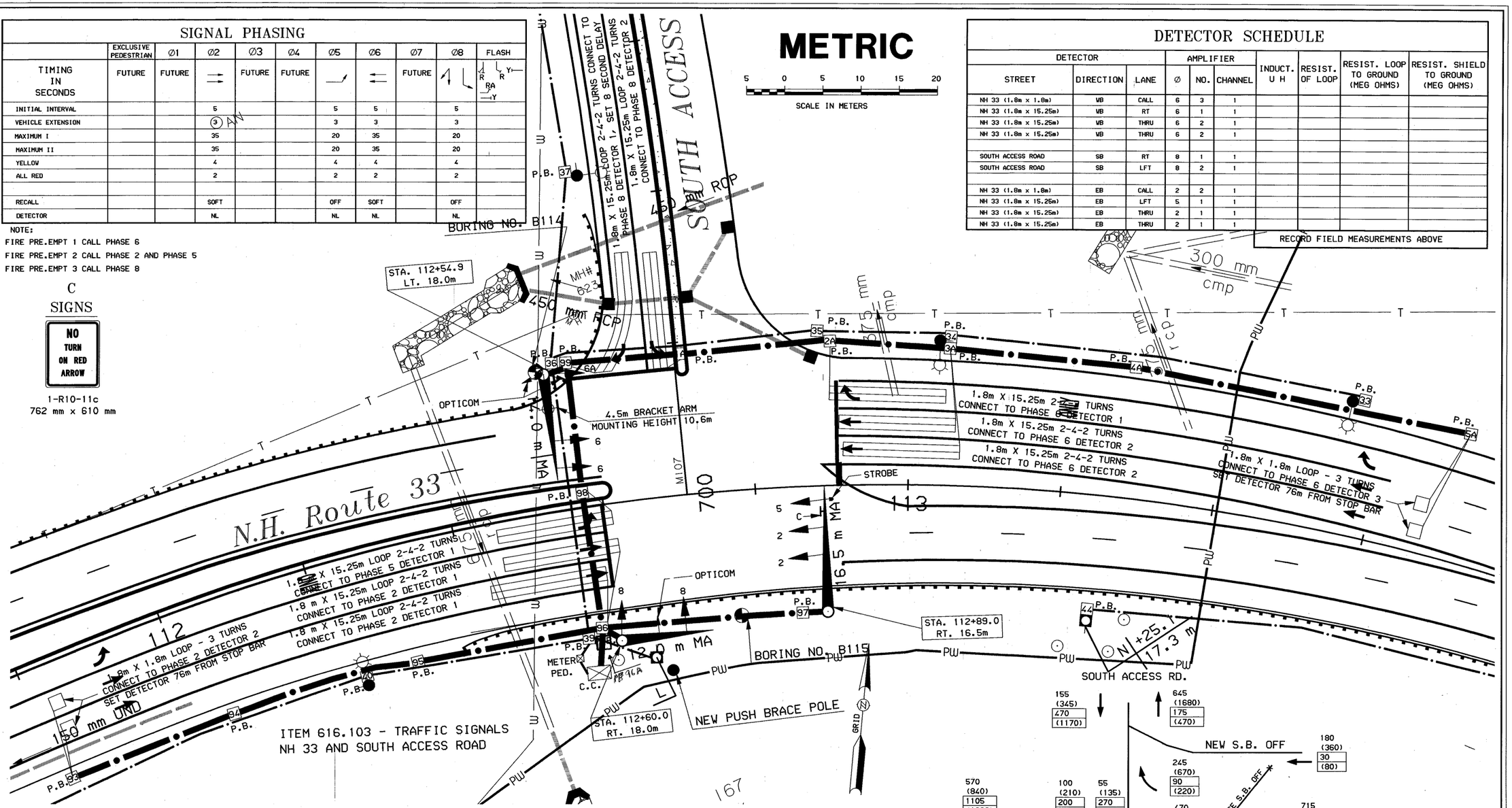
METRIC

5 0 5 10 15 20
SCALE IN METERS

DETECTOR SCHEDULE

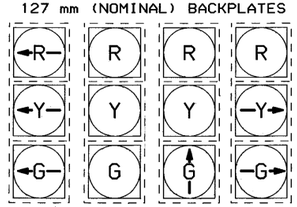
DETECTOR STREET	DIRECTION	LANE	AMPLIFIER Ø	NO.	CHANNEL	INDUCT. U H	RESIST. OF LOOP	RESIST. LOOP TO GROUND (MEG OHMS)	RESIST. SHIELD TO GROUND (MEG OHMS)
NH 33 (1.8m x 1.8m)	WB	CALL	6	3	1				
NH 33 (1.8m x 15.25m)	WB	RT	6	1	1				
NH 33 (1.8m x 15.25m)	WB	THRU	6	2	1				
NH 33 (1.8m x 15.25m)	WB	THRU	6	2	1				
SOUTH ACCESS ROAD	SB	RT	8	1	1				
SOUTH ACCESS ROAD	SB	LFT	8	2	1				
NH 33 (1.8m x 1.8m)	EB	CALL	2	2	1				
NH 33 (1.8m x 15.25m)	EB	LFT	5	1	1				
NH 33 (1.8m x 15.25m)	EB	THRU	2	1	1				
NH 33 (1.8m x 15.25m)	EB	THRU	2	1	1				

RECORD FIELD MEASUREMENTS ABOVE



SIGNAL HEADS

305 mm LENSES
WITH LOUVERS
127 mm (NOMINAL) BACKPLATES



PULLBOX LOCATION

ITEM # 614.511

93	111+81.6 RT. 15.3m	1A	112+71.7 LT. 18.5m		
94	112+05.0 RT. 15.3m	2A	112+90.2 LT. 19.0m		
95	112+31.5 RT. 15.7m	3A	113+05.0 LT. 18.0m		
96	112+57.5 RT. 16.0m	4A	113+28.0 LT. 17.3m		
97	112+85.5 RT. 16.5m	5A	113+70.0 LT. 17.0m		
98	112+57.5 LT. 1.9m				
99	112+57.8 LT. 19.1m				

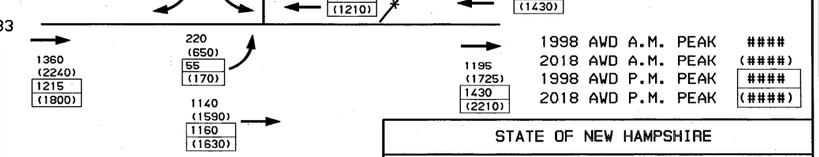
*SEE UTILITY SHEETS FOR LIGHTING SUMMARY

CONDUIT SUMMARY

(75 mm PVC PLASTIC CONDUIT INC. SPEC. EX.)

BOX #'S	614.70814 SCH 40	614.70824 SCH 40	614.70828 SCH 80	BOX #'S	614.70814 SCH 40	614.70824 SCH 40	614.70828 SCH 80
93-94		22.6m		98-99			17.2m
94-95		25.0m		99-MA	3.3m		
95-96			24.5m	99-1A			15.0m
96-97	26.3m			1A-2A			19.7m
97-MA	3.3m			2A-3A		15.8m	
96-CC	6.3m			3A-4A		24.5m	
96-MA	3.1m			4A-5A	14.8m	30.3m	
96-98			17.9m				

TRAFFIC DATA



AS-BUILT PLANS

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

SIGNALIZATION PLAN

MULTIPLOT NAME	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
SIGNAL3.DAT		P_SIGN	CM-5379(017)	12250	116	282

REVISIONS AFTER PROPOSAL

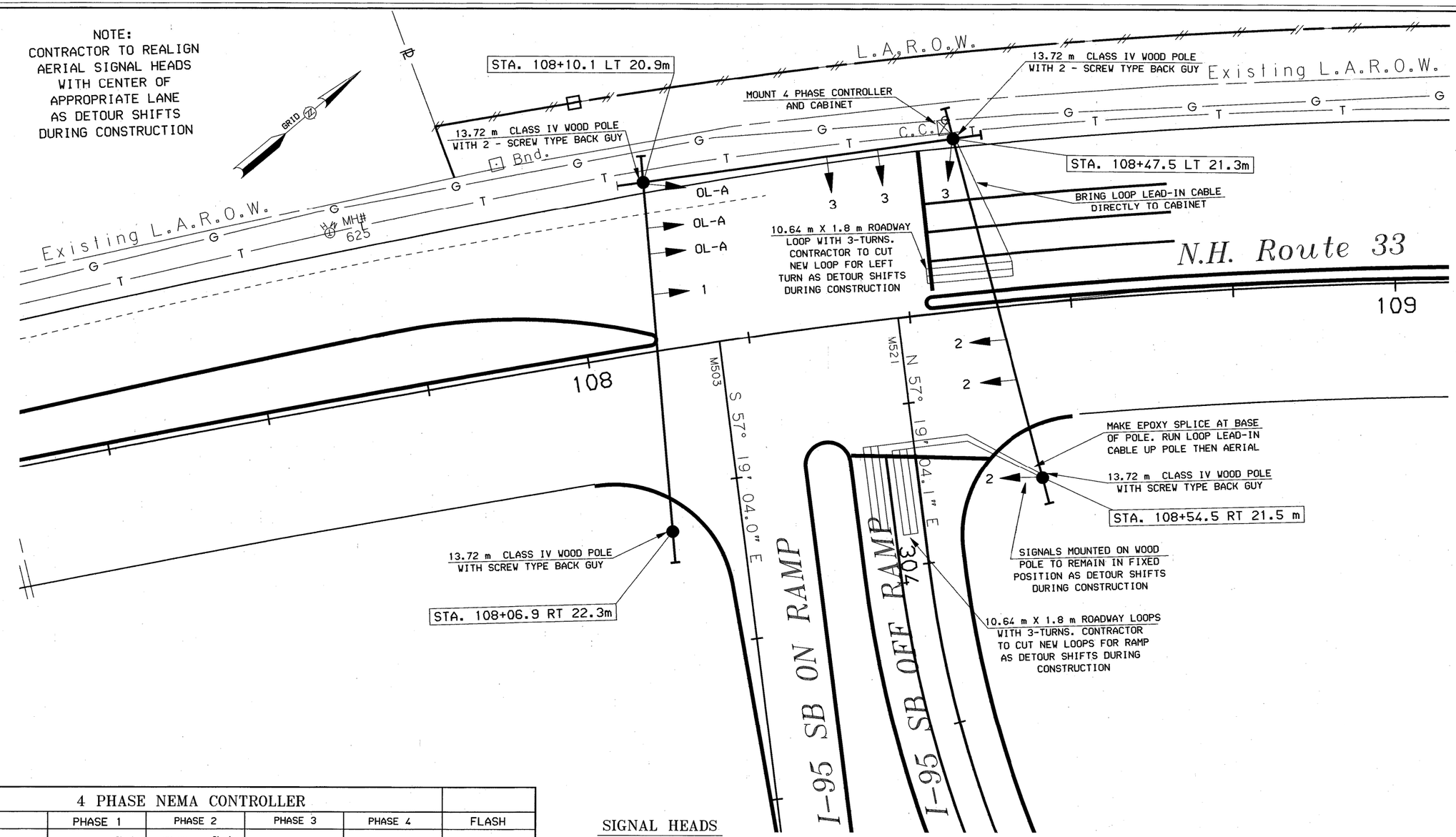
NUMBER	DATE	STATION	DESCRIPTION

NOTEBOOKS

BOOK	PAGE	
BOOK	PAGE	
BOOK	PAGE	

EXISTING DETAIL	DATE
PROPOSED DESIGN	DATE
SHEET CHECKED	DATE
CAD PLOT	E. RICHARDSON DATE 8/20/98
AS BUILT DETAILS	DATE

NOTE:
CONTRACTOR TO REALIGN AERIAL SIGNAL HEADS WITH CENTER OF APPROPRIATE LANE AS DETOUR SHIFTS DURING CONSTRUCTION

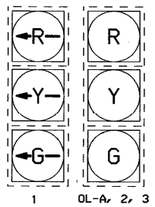


4 PHASE NEMA CONTROLLER													
	PHASE 1			PHASE 2			PHASE 3			PHASE 4			FLASH
	NH 33 WB LEFT TURN OL-A, Ø 1			NH 33 THRU MOVEMENT OL-A, Ø 2			I-95 SB OFF RAMP			NOT USED			
NH 33 WB LEFT	~~G~~	~~Y~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~				FLASH RED
NH 33 WB THRU	G	Y*	R*	G	Y	R	R	R	R				FLASH YELLOW
NH 33 EB THRU	R	R	R	G	Y	R	R	R	R				FLASH YELLOW
I-95 SB OFF RAMP	R	R	R	R	R	R	G	Y	R				FLASH RED
INITIAL	5						5						
EXTENTION	4						4						
MAXIMUM I	20			40			20						
YELLOW		4			5			4					
RED			2			2			2				
RECALL	NL			MAX I			NL						

* GREEN IF PHASE 2 NEXT

SIGNAL HEADS

305 mm LENSES WITH 127 mm (NOMINAL) BACKPLATES



ITEM 616.161 - TEMPORARY TRAFFIC SIGNALS
NH 33 AND I-95 SOUTHBOUND ON/OFF RAMPS

METRIC

5 0 5 10 15 20
SCALE IN METERS

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

SIGNALIZATION PLAN

MULTIPLOT NAME	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
SIGNAL4.DAT	SIGNAL4	P_SIGN	CM-5379(017)	12250	117	282

REVISIONS AFTER PROPOSAL

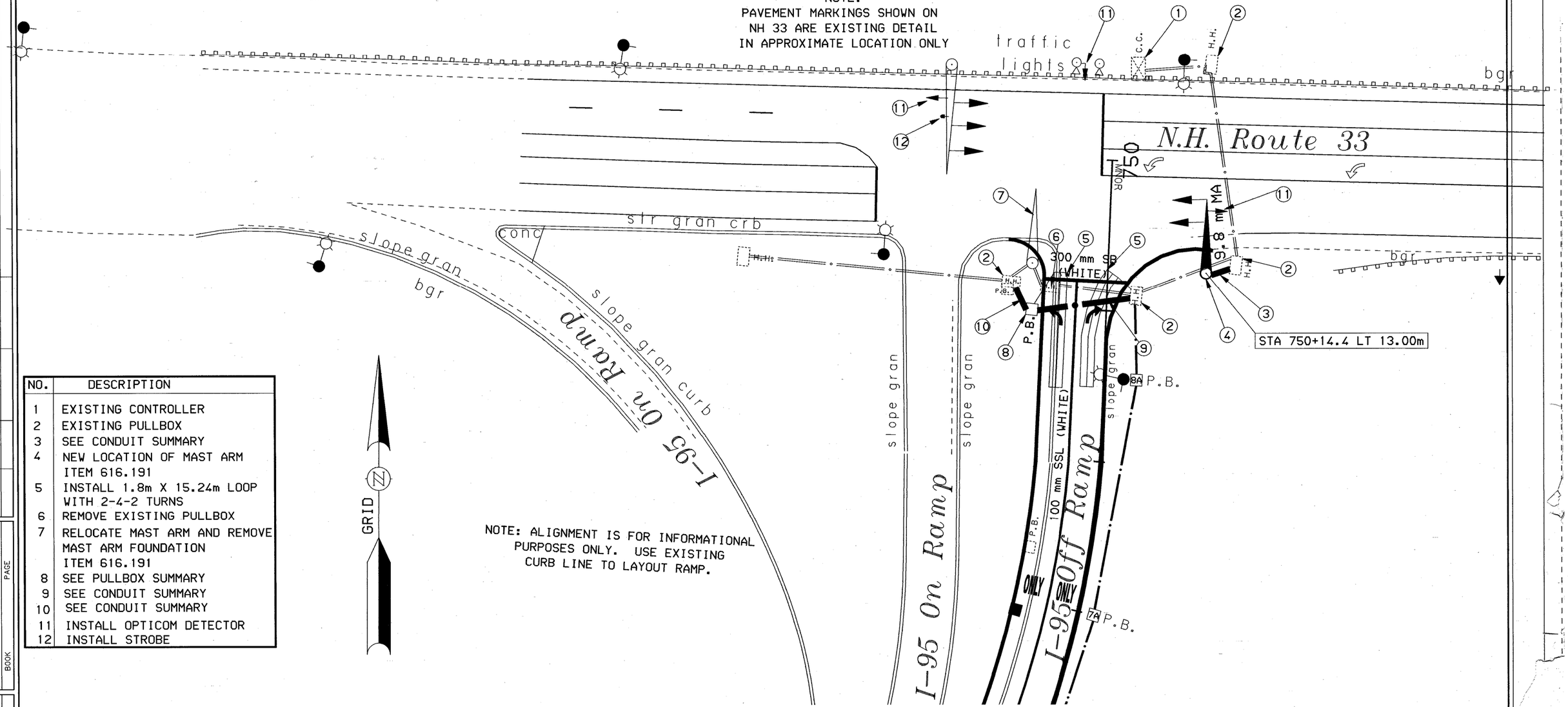
NUMBER	DATE	STATION	STATION	DESCRIPTION

NOTEBOOKS

BOOK	PAGE	
BOOK	PAGE	
BOOK	PAGE	

EXISTING DETAIL	DATE
PROPOSED DESIGN	DATE
SHEET CHECKED	DATE
CAD PLOT	E.RICHARDSON DATE 7/22/98
AS BUILT DETAILS	DATE

NOTE:
PAVEMENT MARKINGS SHOWN ON
NH 33 ARE EXISTING DETAIL
IN APPROXIMATE LOCATION ONLY



NOTE: ALIGNMENT IS FOR INFORMATIONAL PURPOSES ONLY. USE EXISTING CURB LINE TO LAYOUT RAMP.

NO.	DESCRIPTION
1	EXISTING CONTROLLER
2	EXISTING PULLBOX
3	SEE CONDUIT SUMMARY
4	NEW LOCATION OF MAST ARM ITEM 616.191
5	INSTALL 1.8m X 15.24m LOOP WITH 2-4-2 TURNS
6	REMOVE EXISTING PULLBOX
7	RELOCATE MAST ARM AND REMOVE MAST ARM FOUNDATION ITEM 616.191
8	SEE PULLBOX SUMMARY
9	SEE CONDUIT SUMMARY
10	SEE CONDUIT SUMMARY
11	INSTALL OPTICOM DETECTOR
12	INSTALL STROBE

CONDUIT AND PULLBOX SUMMARY
(75 mm PVC PLASTIC CONDUIT INC. SPEC. EX.)

LOCATION	614.511	614.70814 SCH 40	614.70818 SCH 80
STA. 750+20.2 RT 9.93m	1		
			14.0m
STA. 750+17.9 LT 3.87m			
STA. 750+20.2 RT 9.93m			
		4.6m	
STA. 750+16.7 RT 12.84m			
STA. 750+14.4 LT 13.00m			
		4.1m	
STA. 750+13.2 LT 16.92m			

*SEE N.B. OFF RAMP PLAN FOR LIGHTING CONDUIT SUMMARY

ITEM 616.191 - ALTERATIONS TO TRAFFIC SIGNALS
NH 33 AND I-95 NORTHBOUND OFF RAMP

METRIC

5 0 5 10 15 20
SCALE IN METERS

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

SIGNALIZATION PLAN

MULTIPLOT NAME	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
SIGNALS.DAT		P_SIGN	CM-5379(017)	12250	118	282

REVISIONS AFTER PROPOSAL

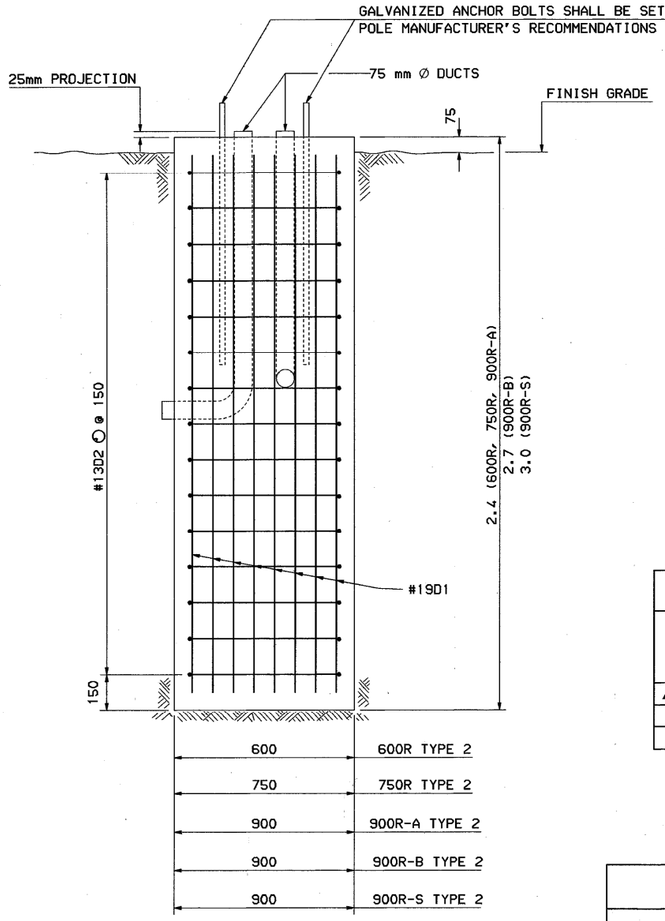
NUMBER	DESCRIPTION	DATE	STATION	STATION

NOTEBOOKS

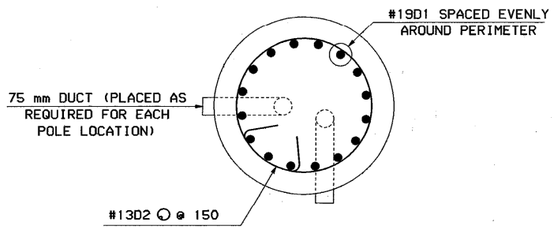
	BOOK	PAGE
	BOOK	PAGE
	BOOK	PAGE

	DATE
EXISTING DETAIL	
PROPOSED DESIGN	
SHEET CHECKED	
CAD PLOT	E. RICHARDSON DATE 8/11/98
AS BUILT DETAILS	

TRAFFIC SIGNAL MAST ARM FOUNDATION – TYPE 2 – 600R, 750R, 900R-A, 900R-B, 900R-S



ELEVATION



PLAN

REINFORCING SCHEDULE

MARK	SIZE	NO.	UNBENT LENGTH	TYPE
D1	#19	"X"	"Z"	——
D2	#13	"W"	"Y"	○

FOUNDATION SIZE	"W"	"X"	"Y"	"Z"
600R	15	12	1825	2250
750R	15	16	2300	2250
900R-A	15	20	2775	2250
900R-B	17	20	2775	2550
900R-S	20	20	2775	2850

FOUNDATION SIZE	DIMENSION	
	D	P
600R	440	1382
750R	590	1854
900R-A	740	2325
900R-B	740	2325
900R-S	740	2325

TYPICAL QUANTITIES PER BASE

ITEM NUMBER	ITEM	UNIT	QUANTITY FOR FOOTING SIZE				
			600R	750R	900R-A	900R-B	900R-S
▲ 508*	STRUCTURAL FILL	m^3	19	20	22	25	27
520.21*	CONCRETE CLASS B (ftgs)	m^3	0.8	1.1	1.6	1.8	2.0
544*	REINFORCING STEEL	kg	89	115	142	161	185

* ITEM NUMBERS SHOWN ARE FOR SPECIFICATION REFERENCE ONLY. NO SEPARATE PAYMENT WILL BE MADE FOR THESE ITEMS.

GENERAL NOTES (TYPE 2 FOOTING)

(1) THE ROUND TYPE 2 FOOTING SHALL BE POURED IN DRILLED HOLES AGAINST UNDISTURBED MATERIAL. THE MAXIMUM DESIGN SOIL PRESSURE IS 0.15 MPa (BOTH HORIZONTALLY AND VERTICALLY). IF THE SOIL IS NOT CAPABLE OF A BEARING PRESSURE OF 0.15 MPa OR WILL NOT STAND VERTICALLY, THE ENGINEER SHALL REQUEST AN EXCAVATED HOLE AS DESCRIBED BELOW.

(2) THE DRILLED HOLES FOR THE ROUND TYPE 2 FOOTING SHALL BE MADE WITH THE PROPER SIZE AUGER DRILLED TO THE PROPOSED BOTTOM OF FOOTING (2.4 m BELOW THE FINISHED GROUND SURFACE FOR 600R, 750R AND 900R-A, AND 2.7 m FOR 900R-B).

(3) TRENCHES FOR THE CONDUITS SHALL BE HAND DUG WITHIN 1.5 m OF THE PROPOSED FOOTING SURFACE, DISTURBING AS LITTLE SOIL AS POSSIBLE IN PLACING OF THE CONDUITS (APPROXIMATELY 0.8 m MAXIMUM DOWN FROM THE EXISTING GROUND SURFACE). THE RESULTING TRENCHES SHALL BE BACKFILLED WITH ITEM 508 COMPACTED ACCORDING TO N.H. SPECIFICATIONS. THE HORIZONTAL LIMIT OF ITEM 508 SHALL BE 1.5 m FROM THE FOOTING SURFACE.

(4) THE ENGINEER SHALL REQUEST A BORING AT ANY LOCATION WHERE HE DEEMS THE SOILS TO BE QUESTIONABLE BEFORE PROCEEDING WITH THE DRILLING OPERATION. IF AFTER THE DRILLING OPERATION THE SOILS ARE FOUND UNSUITABLE, THE ENGINEER SHALL REQUEST AN EXCAVATED HOLE AS DETERMINED BELOW OR THE USE OF A TYPE 1 SPREAD FOOTING.

(5) WHERE LEDGE IS ENCOUNTERED THE DRILL SHALL PENETRATE THE LEDGE A MINIMUM OF 0.9 m AND IN ALL CASES A MINIMUM FOOTING LENGTH OF 1.5 m SHALL BE OBTAINED. MAXIMUM DRILL PENETRATION SHALL BE 2.4 m FOR 600R, 750R AND 900R-A, AND 2.7 m FOR 900R-B.

(6) ALL REINFORCING STEEL SHALL BE EITHER GRADE 300 OR GRADE 400.

(7) ALL REINFORCING STEEL SHALL BE A MINIMUM 75 mm CLEAR.

▲ EXCAVATED HOLES

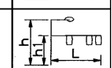
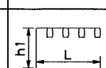
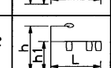
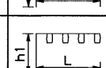
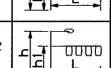
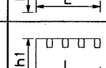
(1) AS AN ALTERNATIVE TO THE ABOVE DRILLED HOLES, THE ROUND TYPE 2 FOOTINGS MAY BE POURED IN EXCAVATED HOLES, USING THE PROPER FORMS WHICH MUST BE REMOVED, OR PRECAST AND PLACED IN THE EXCAVATED HOLES.

(2) THE EXCAVATED HOLES SHALL BE AT LEAST 0.9 m CLEAR OF THE FOOTING SIDES AND 0.3 m DEEPER THAN THE FOOTING. CARE SHALL BE TAKEN TO AVOID OVER-EXCAVATING AROUND THE TOP OF THE FOOTING.

(3) ANY LEDGE ENCOUNTERED SHALL BE REMOVED TO THE ABOVE LIMITS IF POSSIBLE OR THE ENGINEER SHALL REQUEST A REDESIGN.

(4) THE TOTAL EXCAVATED HOLE FOR EACH FOOTING SHALL BE COMPLETELY BACKFILLED WITH STRUCTURAL FILL, ITEM 508, AND COMPACTED ACCORDING TO THE N.H. SPECIFICATIONS.

STANDARD ROUND TRAFFIC SIGNAL FOUNDATION
DETERMINATION OF REQUIRED FOOTING SIZE

FOOTING SIZE	CASE 1 MAX. h=12.2 MAX. h1=6.7			CASE 2 MAX. h1=6.7		
	SHAPE	MAX. LENGTH OF ONE MAST ARM WITH ONE LUMINAIRE ON THE SAME POLE (L)	MAX. NUMBER OF SIGNALS FOR CASE 1	SHAPE	MAX. LENGTH OF ONE MAST ARM WITH NO LUMINAIRE (L)	MAX. NUMBER OF SIGNALS FOR CASE 2
600R TYPE 2 (600 x 2.4)		5.0	2		8.0	3
750R TYPE 2 (750 x 2.4)		8.0	3		11.0	4
900R-A TYPE 2 (900 x 2.4)		11.0	3		13.0	4
900R-B TYPE 2 (900 x 2.7)		15.0	4		15.0	4

NOTE: COMBINATIONS OTHER THAN THOSE SHOWN IN THE ABOVE CHART SHALL NOT BE USED WITHOUT DESIGN APPROVAL.

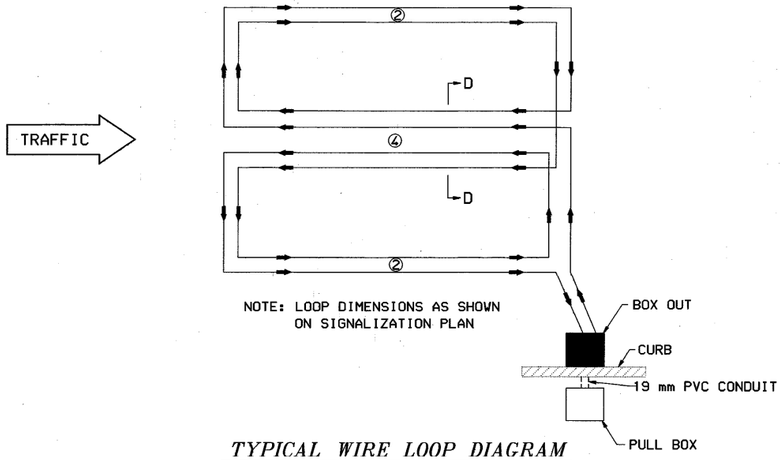
DETAIL SHEET MODIFIED TO INCLUDE SPECIAL FOUNDATION 900R-S

STATE OF NEW HAMPSHIRE

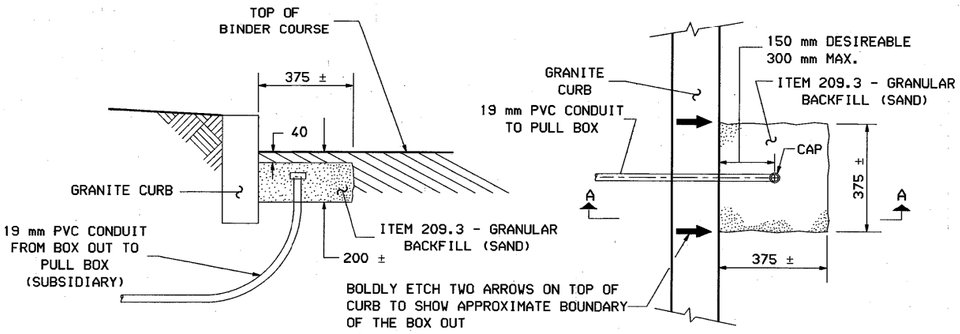
DEPARTMENT OF TRANSPORTATION ◦ BUREAU OF HIGHWAY DESIGN

TRAFFIC SIGNAL MAST ARM FOUNDATION – TYPE 2

WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
PORTSGNL	MISC	CM-5379(017)	12250	119	282

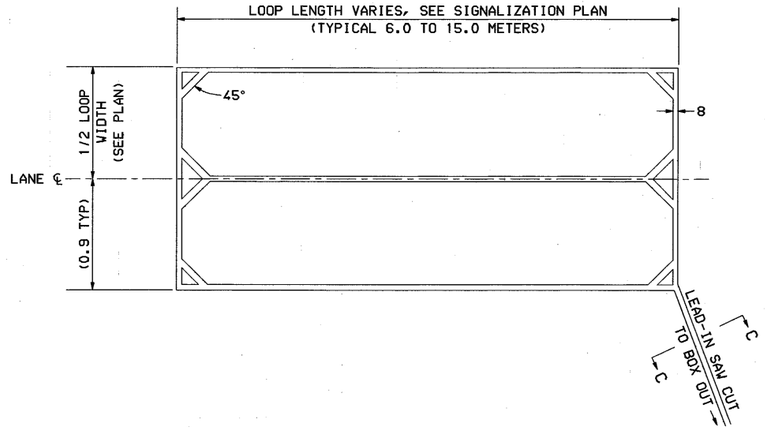


TYPICAL WIRE LOOP DIAGRAM
NOT TO SCALE

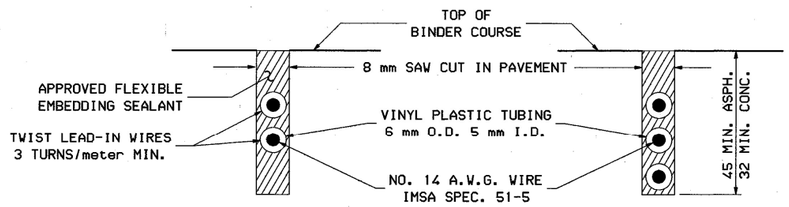


SECTION A-A PLAN

DETECTOR BOX OUT DETAIL STAGE 1: AT PAVING
NOT TO SCALE



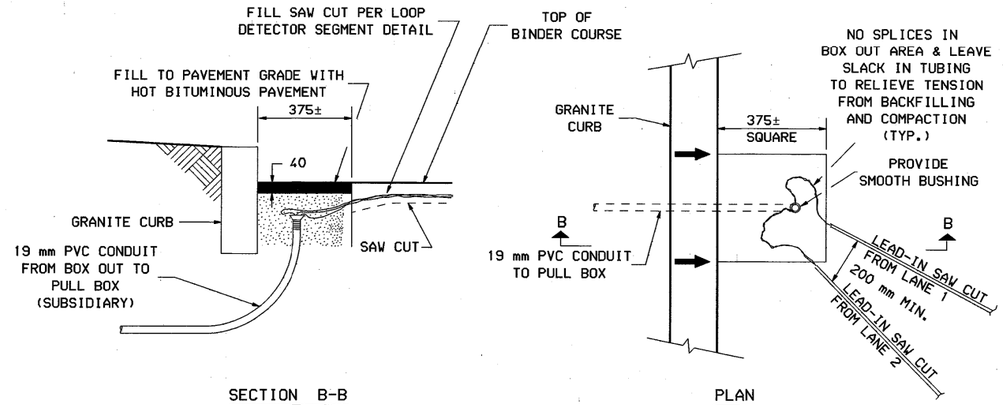
QUADRUPOLE LOOP INSTALLATION SAW CUT DETAIL
NOT TO SCALE



SECTION C-C
LEAD-IN SAW CUT FROM SEGMENT TO BOX OUT

SECTION D-D
SEGMENT SECTION SAW CUT

LOOP DETECTOR SEGMENT DETAIL
NOT TO SCALE



SECTION B-B PLAN

GENERAL NOTES

1. MAXIMUM OF TWO LEAD-IN PAIRS PER 19 mm CONDUIT.
2. TAPE TUBING 75 mm ON EACH SIDE OF THE SAW CUT BOX OUT BOUNDARY WITH ELECTRICAL TAPE.
3. AFTER TUBING IS INSTALLED, FILL CONDUIT WITH CRUMPLED PAPER AND SEAL WITH PLIABLE DUCT SEALANT.
4. USE ITEM 209.3 - GRANULAR BACKFILL (SAND) TO COVER AND SUPPORT THE VINYL PLASTIC TUBING.

DETECTOR BOX OUT DETAIL STAGE 2: AT LOOP INSTALLATION
NOT TO SCALE

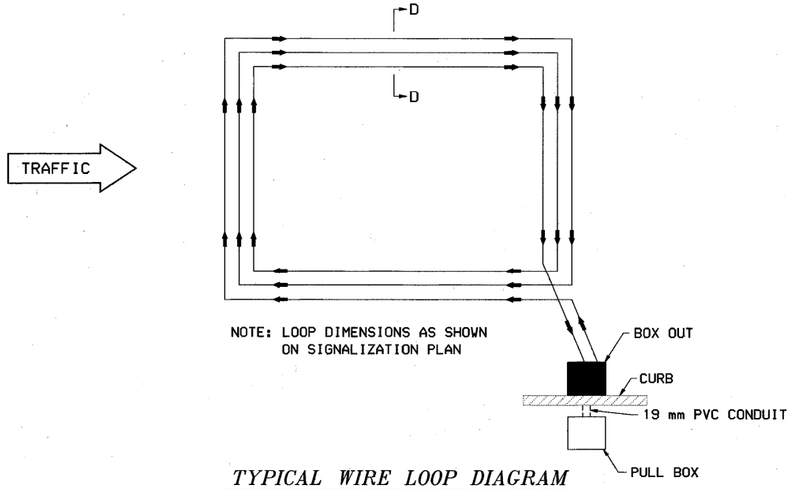
ALL DIMENSIONS SHOWN ARE IN MILLIMETERS OR METERS. WHOLE NUMBERS INDICATE MILLIMETERS, DECIMAL NUMBERS INDICATE METERS UNLESS OTHERWISE NOTED.

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF HIGHWAY DESIGN

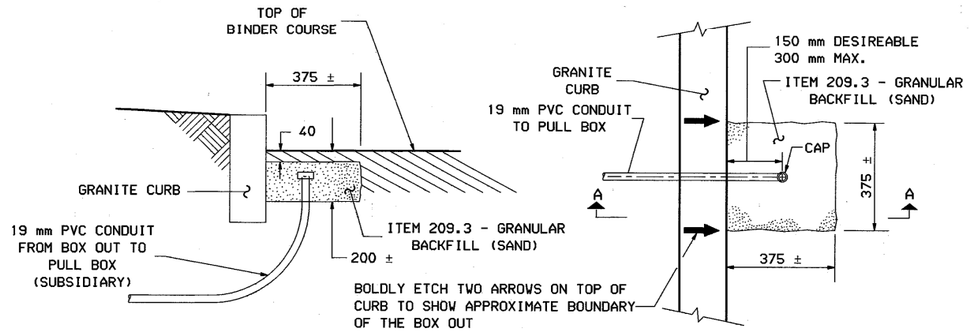
QUADRUPOLE LOOP DETECTOR 2-4-2 TURNS

REVISION DATE	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
11-4-97	TS-3D	M-DETAIL	CM-5379(017)	12250	120	282



TYPICAL WIRE LOOP DIAGRAM

NOT TO SCALE

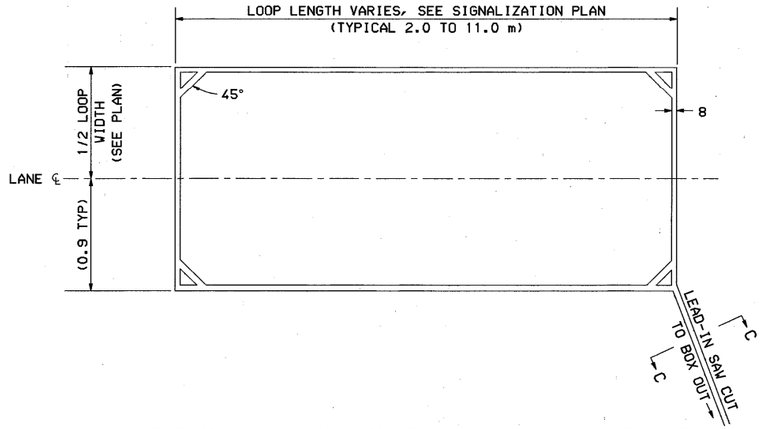


SECTION A-A

PLAN

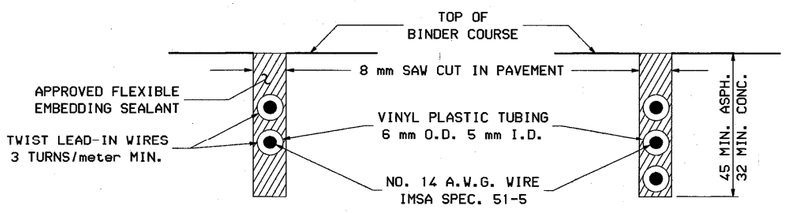
DETECTOR BOX OUT DETAIL STAGE 1: AT PAVING

NOT TO SCALE



RECTANGULAR LOOP INSTALLATION SAW CUT DETAIL

NOT TO SCALE



SECTION C-C

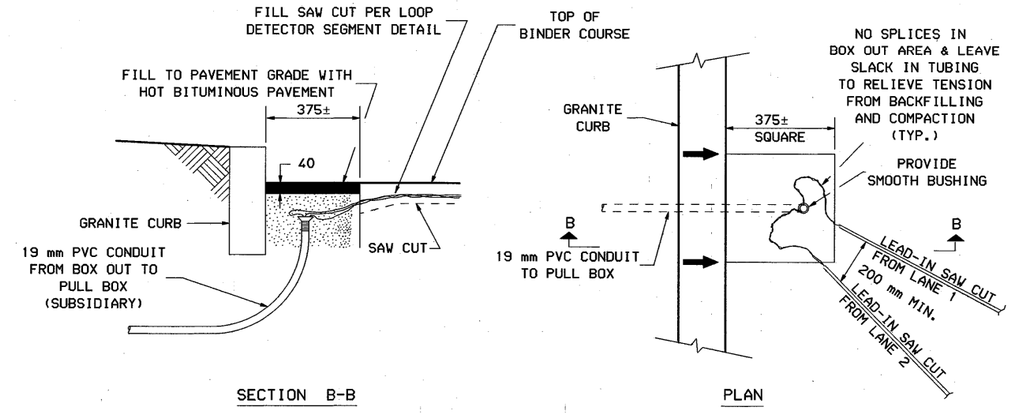
LEAD-IN SAW CUT FROM SEGMENT TO BOX OUT

SECTION D-D

SEGMENT SECTION SAW CUT

LOOP DETECTOR SEGMENT DETAIL

NOT TO SCALE



SECTION B-B

PLAN

GENERAL NOTES

1. MAXIMUM OF TWO LEAD-IN PAIRS PER 19 mm CONDUIT.
2. TAPE TUBING 75 mm ON EACH SIDE OF THE SAW CUT BOX OUT BOUNDARY WITH ELECTRICAL TAPE.
3. AFTER TUBING IS INSTALLED, FILL CONDUIT WITH CRUMPLED PAPER AND SEAL WITH PLIABLE DUCT SEALANT.
4. USE ITEM 209.3 - GRANULAR BACKFILL (SAND) TO COVER AND SUPPORT THE VINYL PLASTIC TUBING.

DETECTOR BOX OUT DETAIL STAGE 2: AT LOOP INSTALLATION

NOT TO SCALE

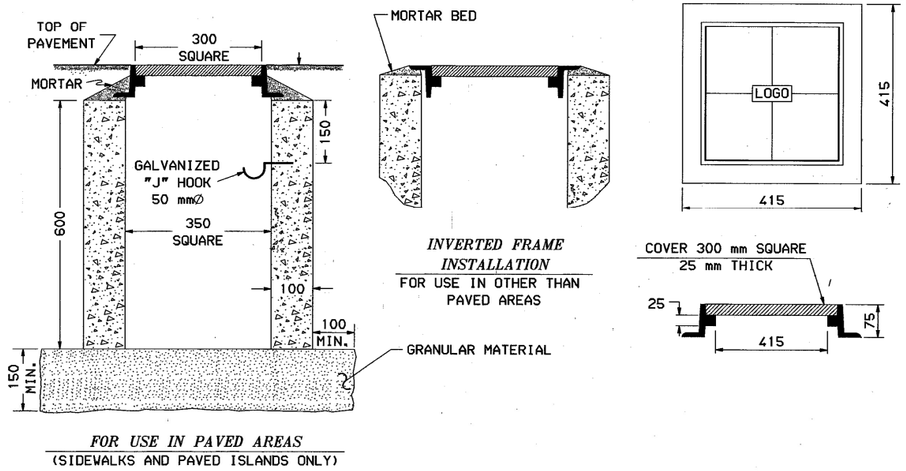
ALL DIMENSIONS SHOWN ARE IN MILLIMETERS OR METERS. WHOLE NUMBERS INDICATE MILLIMETERS, DECIMAL NUMBERS INDICATE METERS UNLESS OTHERWISE NOTED.

STATE OF NEW HAMPSHIRE

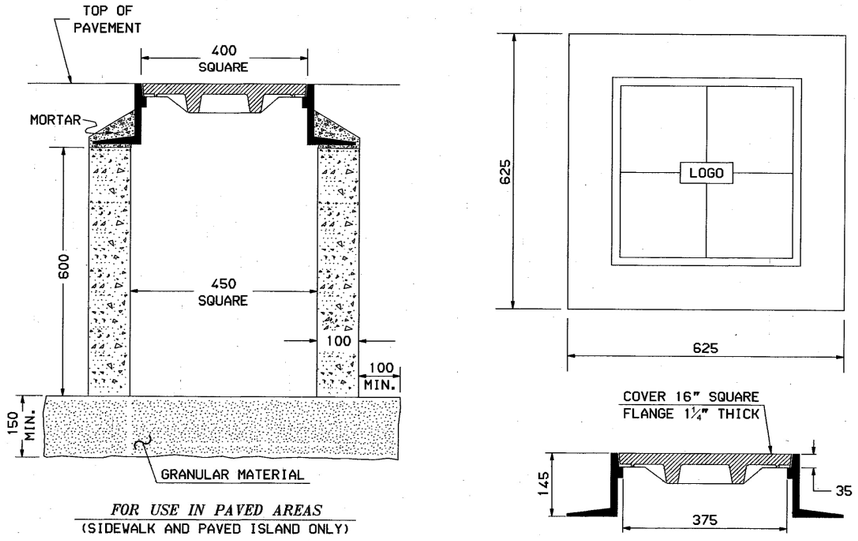
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

RECTANGULAR LOOP DETECTOR 3 TURNS

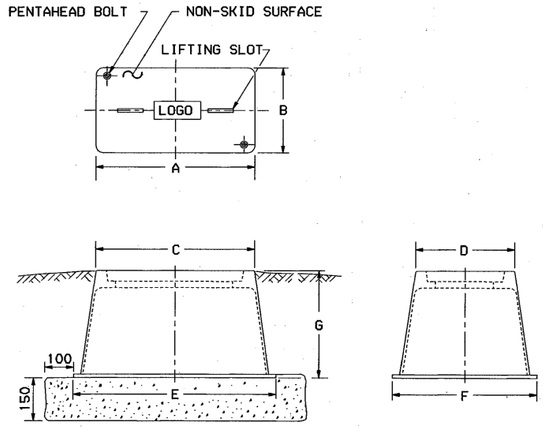
REVISION DATE	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
11-4-97	TS-4D	M-DETAIL	CM-5379(017)	12250	121	282



CONCRETE PULL BOX TYPE A
COVER & FRAME

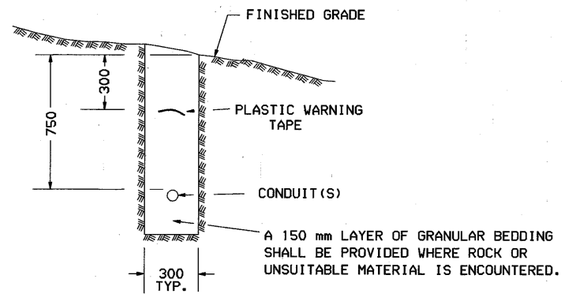


CONCRETE PULL BOX TYPE B
COVER & FRAME



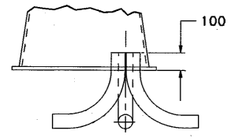
	A	B	C	D	E	F	G
TYPE A	575	325	625	375	775	550	400 - 450
TYPE B	750	425	800	475	975	650	650

MOLDED PULL BOX TYPE A & B
FOR USE IN OTHER THAN PAVED AREAS



NOTE: BACKFILL ABOVE CONDUIT SHALL BE IN ACCORDANCE WITH 614.

TRENCH DETAIL FOR CONDUIT INSTALLATION



90° ELBOWS - NUMBER, SIZE & TYPE AS REQUIRED IN PLANS OR SPECIAL PROVISIONS. USE STEEL ELBOWS WITH GROUNDING BUSHINGS WHEN CONDUIT RUN EXCEEDS 60 m.

CONDUIT ARRANGEMENT - ALL TYPES

GENERAL NOTES

1. DIMENSIONS SHOWN ARE NOMINAL. MOLDED PULL BOXES MAY VARY BY 12 mm.
2. ADJUST FRAMES & COVERS SO THAT DRAINAGE WILL BE AWAY FROM PULL BOX.
3. LOGO = SIGNAL OR POWER AS REQUIRED, ON CENTER OF COVER.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS OR METERS. WHOLE NUMBERS INDICATE MILLIMETERS, DECIMAL NUMBERS INDICATE METERS UNLESS OTHERWISE NOTED.

STATE OF NEW HAMPSHIRE

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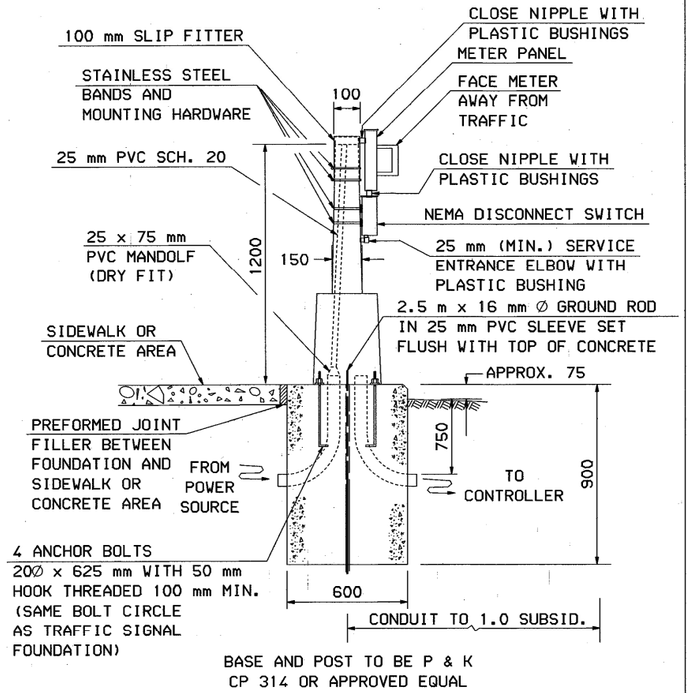
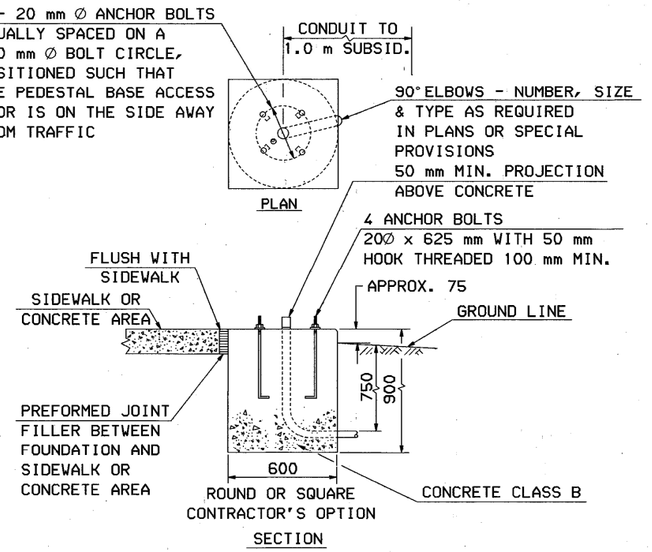
PULL BOXES & TRENCH DETAIL

REVISION DATE	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
12-4-97	SL-1D	M-DETAIL	CM-5379(017)	12250	122	282



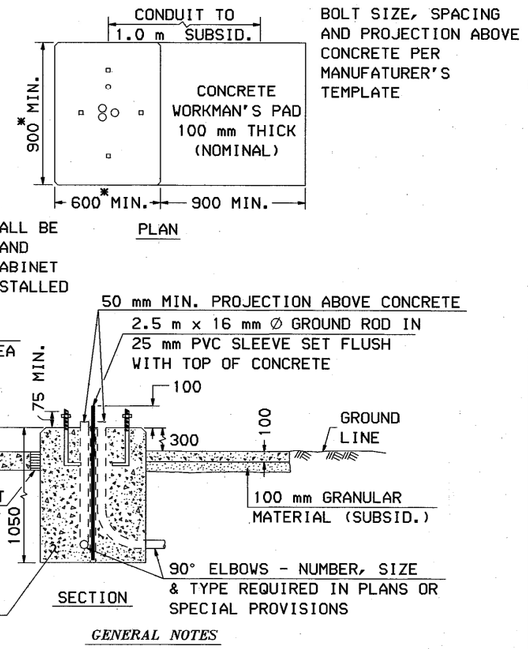
BASE AND POST TO BE P & K CP 314 OR APPROVED EQUAL

TRAFFIC SIGNAL METER PEDESTAL AND FOUNDATION



1. SIZE OF FOUNDATION MAY BE CHANGED IN THE PLANS OR SPECIAL PROVISIONS, OR IN THE FIELD AS DIRECTED BY THE ENGINEER.
2. ALL EXPOSED EDGES SHALL BE CHAMFERED 20 mm.
3. OPEN ENDS OF ALL CONDUITS INTO FOUNDATION SHALL BE CAPPED UNTIL CABLES ARE INSTALLED.

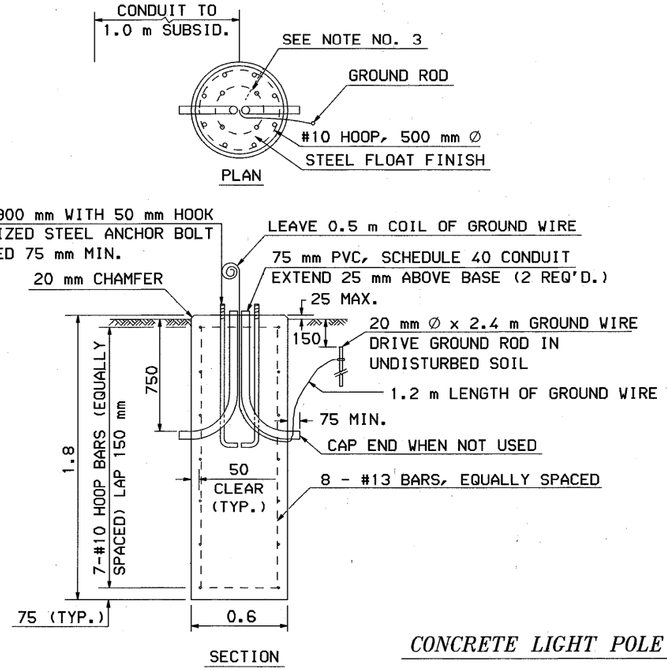
CONCRETE FOUNDATION FOR PEDESTALS
(TRAFFIC OR PEDESTRIAN SIGNAL)



GENERAL NOTES

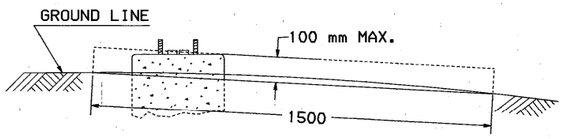
1. WORKMAN'S PAD MAY BE ELIMINATED IF CONTROLLER CABINET IS IN SIDEWALK SECTION.
2. ALL EXPOSED EDGES SHALL BE CHAMFERED 20 mm.
3. WORKMAN'S PAD (AND CABINET DOOR) SHOULD BE ORIENTED TO PERMIT MAXIMUM VIEW OF SIGNAL INSTALLATION (AWAY FROM TRAFFIC IF POSSIBLE).

CONCRETE FOUNDATION FOR CONTROLLER CABINET



CONCRETE LIGHT POLE BASE TYPE B

1. ALL LIGHT POLES, LUMINAIRES, AND WIRE TO BE FURNISHED AND INSTALLED BY THE POWER COMPANY, UNLESS OTHERWISE DIRECTED.
2. ANCHOR BOLTS, GROUND ROD & GROUND WIRE TO BE FURNISHED BY THE POWER COMPANY AND INSTALLED BY THE CONTRACTOR, UNLESS OTHERWISE NOTED.
3. BOLT CIRCLE DIAMETER SHALL BE VERIFIED WITH THE POWER COMPANY.
4. ALL BASES SHALL BE LOCATED 3.0 m (TO CENTER) FROM FACE OF CURB OR EDGE OF PAVED SHOULDER, UNLESS OTHERWISE NOTED.
5. REINFORCEMENT SHALL CONFORM TO SECTION 544 OF THE STANDARD SPECIFICATIONS.
6. ANY ANCHOR BOLTS DAMAGED DURING INSTALLATION SHALL BE REPARIED OR REPLACED AS DIRECTED BY THE ENGINEER.
7. UPON INSTALLATION, ANCHOR BOLT THREADS SHALL BE CLEANED WITH A WIRE BRUSH.
8. TERRAIN SURROUNDING BASE MUST BE GRADED AS SHOWN IN DETAIL "A" TO PREVENT IMPACTING VEHICLES FROM SNAGGING ON BASE.



DETAIL "A"

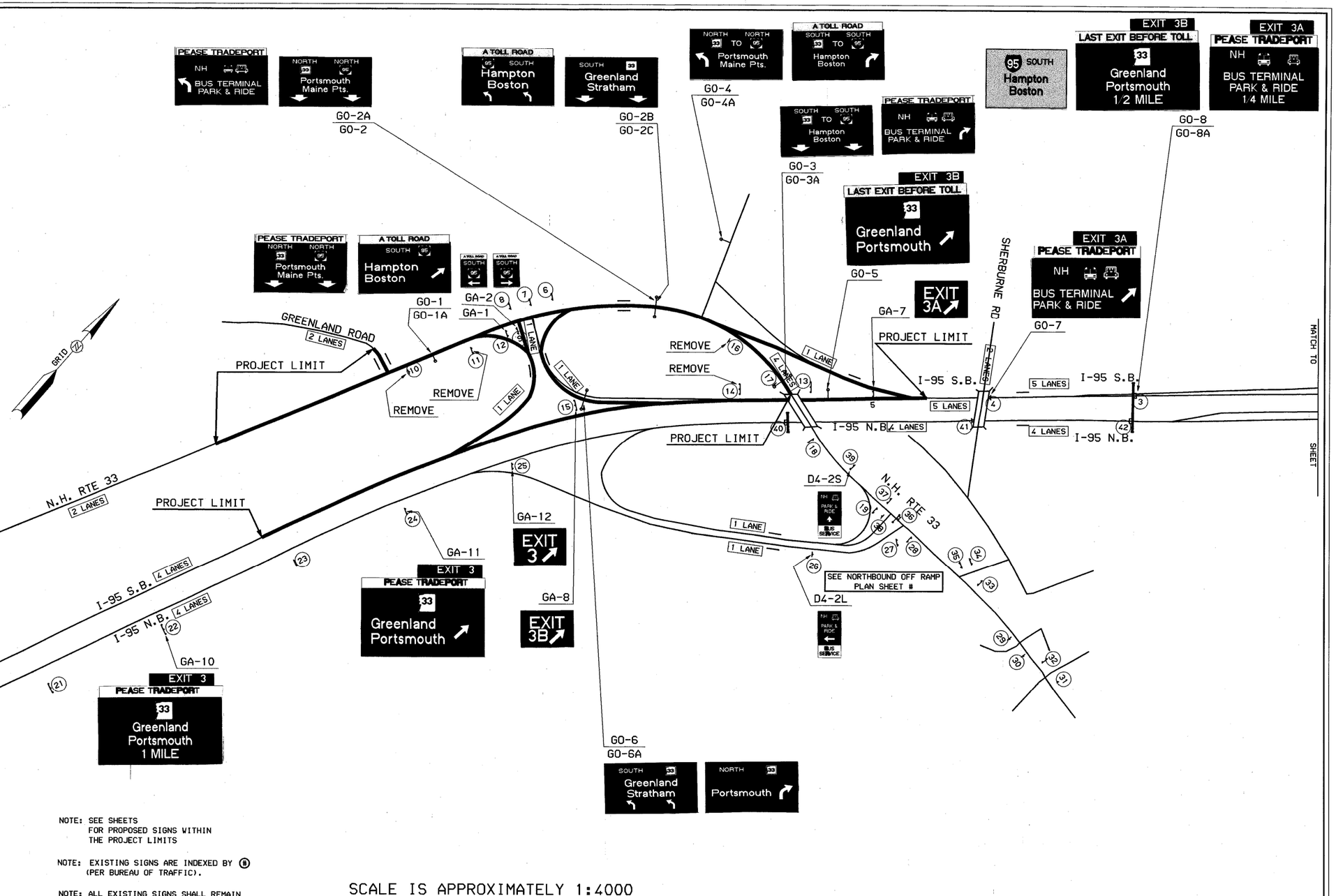
ALL DIMENSIONS SHOWN ARE IN MILLIMETERS OR METERS. WHOLE NUMBERS INDICATE MILLIMETERS, DECIMAL NUMBERS INDICATE METERS UNLESS OTHERWISE NOTED.

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

METER PEDESTAL AND CONCRETE BASES & FOUNDATIONS

REVISION DATE	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
12-4-97	SL-2D	M-DETAIL	CM-5379(017)	12250	123	282



NOTE: SEE SHEETS FOR PROPOSED SIGNS WITHIN THE PROJECT LIMITS

NOTE: EXISTING SIGNS ARE INDEXED BY (8) (PER BUREAU OF TRAFFIC).

NOTE: ALL EXISTING SIGNS SHALL REMAIN IN PLACE, UNLESS TAGGED FOR REMOVAL, RELOCATION OR REPLACEMENT

SCALE IS APPROXIMATELY 1:4000
METRIC

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	DESCRIPTION

NOTEBOOKS

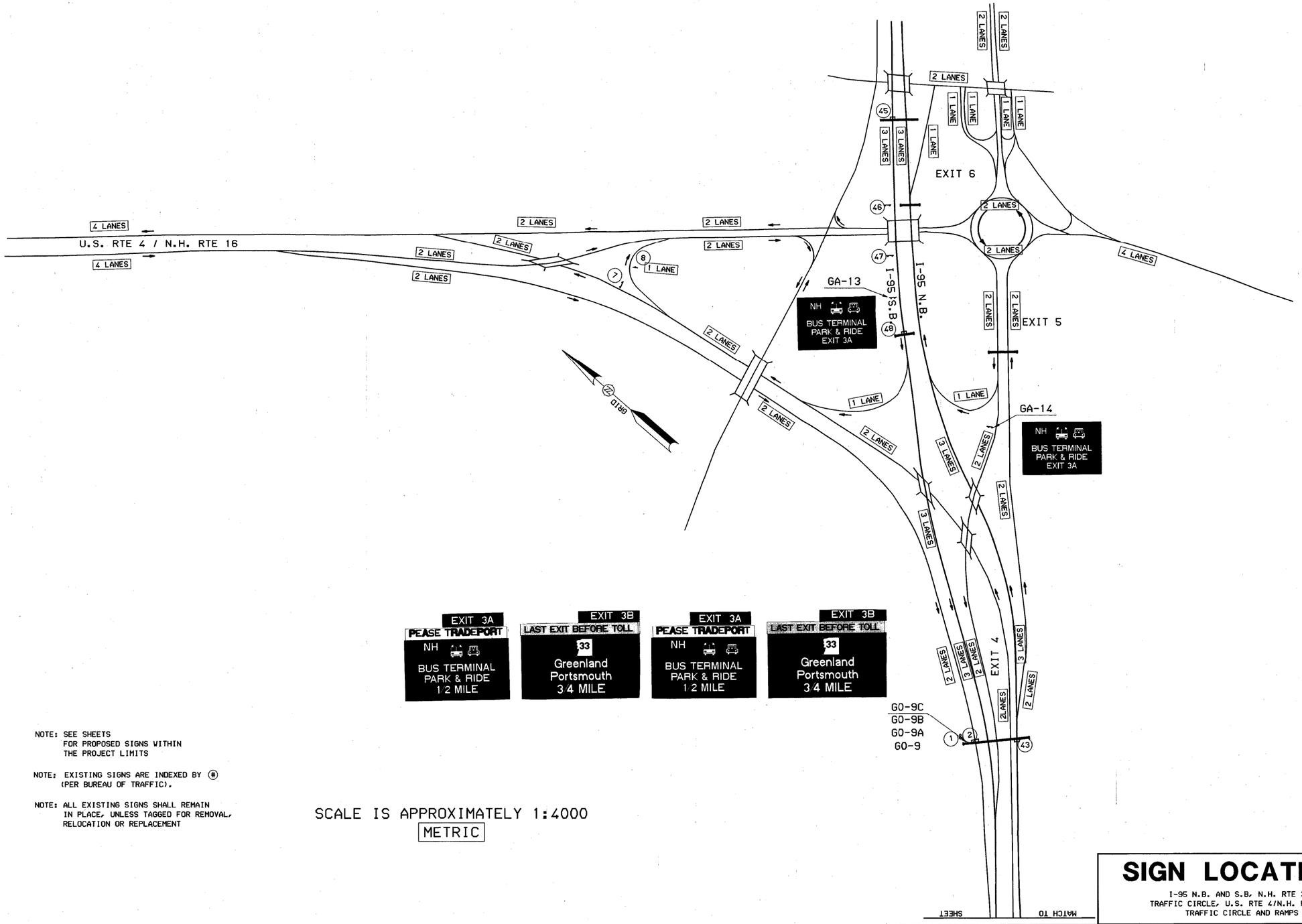
BOOK	PAGE	
BOOK	PAGE	
BOOK	PAGE	

EXISTING DETAIL	DATE
PROPOSED DESIGN	DATE
SHEET CHECKED	DATE
AS BUILT DETAILS	DATE

SIGN LOCATIONS

I-95 N.B. AND S.B, N.H. RTE 33, TRAFFIC CIRCLE, U.S. RTE 4/N.H. RTE 16, TRAFFIC CIRCLE AND RAMPS

WINDOW	MULTIPLOT	FGB	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
SIGNPCK1	SIGNSH01	FRONT SHEET	CM-5379(017)	12250	124	282



NOTE: SEE SHEETS FOR PROPOSED SIGNS WITHIN THE PROJECT LIMITS

NOTE: EXISTING SIGNS ARE INDEXED BY (#) (PER BUREAU OF TRAFFIC).

NOTE: ALL EXISTING SIGNS SHALL REMAIN IN PLACE, UNLESS TAGGED FOR REMOVAL, RELOCATION OR REPLACEMENT

SCALE IS APPROXIMATELY 1:4000

METRIC

SIGN LOCATIONS

I-95 N.B. AND S.B, N.H. RTE 33, TRAFFIC CIRCLE, U.S. RTE 4/N.H. RTE 16, TRAFFIC CIRCLE AND RAMPS

WINDOW	MULTIPLOT	FGB
SIGNPCK1	SIGNSH02	FRONT SHEET

FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
CM-5379(017)	12250	125	282

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	DESCRIPTION

NOTEBOOKS

BOOK		PAGE
BOOK		PAGE
BOOK		PAGE

EXISTING DETAIL	DATE
PROPOSED DESIGN	DATE
SHEET CHECKED	DATE
AS BUILT DETAILS	DATE

IDENT NO.	SIGN SIZE HEIGHT mm	SIGN SIZE WIDTH mm	TEXT	TEXT DIMENSIONS LETTER HEIGHT UC	LC	CAPS	RTE NO. OR SHIELD	ARROW	NUMERAL	NO. SIGNS REQ'D	SIGN AREA (m2) NOM AREA	TOTAL AREA	REMARKS
GO-1	600 3600	3600	PEASE TRADEPORT NORTH NORTH 33 95 Portsmouth Maine Pts.	265 265	200 200	250D 250/200	600x600	550x800	300	1 1	2.16 12.96	15.12	Green/Silver Silver/Green
GO-1A	600 3000	3600	A TOLL ROAD SOUTH 95 Hampton Boston	265 265	200 200	250D	600x600	450x450 @45 deg	300	1	2.16 10.80	12.46	Black/Yellow Silver/Green
GO-2	3600	3600	NORTH NORTH 33 95 Portsmouth Maine Pts.	265 265	200 200	250/200	600x600	550x800	300	1	12.46	12.46	Silver/Green
GO-2A	600 2400	3600	PEASE TRADEPORT NH BUS TERMINAL PARK & RIDE			250D 250C 250C	600x600	450x450		1 1	2.16 8.64	10.80	Green/Silver Silver/Green
GO-2B	600 2700	3600	A TOLL ROAD SOUTH 95 Hampton Boston	265 265	200 200	250D	600x600	450x450 @45 deg	300	1 1	2.16 9.72	11.88	Black/Yellow Silver/Green
GO-2C	2700	3600	SOUTH 33 Greenland Stratham	265 265	200 200	250/200	600x600	550x800	300	1	9.72	9.72	Silver/Green
GO-3	2700	3600	NORTH 95 Portsmouth Maine Pts. NEXT RIGHT	265 265	200 200	250/200 200D	600x600		300	1	9.72	9.72	Silver/Green
GO-3A	3600	3600	SOUTH SOUTH 33 95 Hampton Boston	265 265	200 200	250/200	600x600	550x800	300	1	12.46	12.46	Silver/Green
GO-3B	600 2400	3600	PEASE TRADEPORT NH BUS TERMINAL PARK & RIDE			250D 250C 250C	600x600	450x450		1 1	2.16 8.64	10.80	Green/Silver Silver/Green
GO-4	2700	3600	NORTH NORTH 33 TO 95 Portsmouth Maine Pts.	265 265	200 200	250/200 200C	600x600	450x450	300	1	9.72	9.72	Silver/Green

ITEM NO.	IDENT NO.	SIGN SIZE HEIGHT mm	SIGN SIZE WIDTH mm	TEXT	TEXT DIMENSIONS LETTER HEIGHT UC	LC	CAPS	RTE NO. OR SHIELD	ARROW	NUMERAL	NO. SIGNS REQ'D	SIGN AREA (m2) NOM AREA	TOTAL AREA	REMARKS
615.04	GO-4A	2700	3600	SOUTH SOUTH 33 TO 95 Hampton Boston	265 265	200 200	250/200 200C	600x600	450x450	300	1	9.72	9.72	Silver/Green
615.04	GO-5	600 600 3000	2400 4500 4500	EXIT 3B LAST EXIT BEFORE TOLL 33 Greenland Portsmouth	400 400	300 300	250E 250D	900x900	700x700 @45 deg	375E 450	1	1.44 2.70 13.50	17.64	Silver/Green Black/Yellow Silver/Green
615.04	GO-6	3300	3600	SOUTH 33 Greenland Stratham	265 265	200 200	250/200	600x600	450x450	300	1	11.88	11.88	Silver/Green
615.04	GO-6A	2400	3600	33 NORTH Portsmouth	265	200	250/200	600x600	450x450	300	1	8.64	8.64	Silver/Green
615.04	GO-7	600 600 2400	2400 5700 5700	EXIT 3A PEASE TRADEPORT NH Bus Terminal Park & Ride	400 400	300 300	250E 250D 250E	900x900	700x700	375E	1 1 1	1.44 3.42 13.68	18.54	Silver/Green Green/SIlver Silver/Green **(Use Bus & Carpool Logo)**
615.04	GO-8	600 600 3000	2400 4500 4500	EXIT 3B LAST EXIT BEFORE TOLL 33 Greenland Portsmouth 1/2 MILE	400 400	300 300	250E 250D 250E 250E	900x900		375E 450 250E	1 1 1	1.44 2.70 13.50	17.64	Silver/Green Black/Yellow Silver/Green
615.04	GO-8A	600 600 3000	2400 4500 4500	EXIT 3A PEASE TRADEPORT NH Bus Terminal Park & Ride 1/4 MILE	400 400	300 300	250E 250D 250E 250E	900x900		375E 250E	1 1 1	1.44 2.70 13.50	17.64	Silver/Green Green/SIlver Silver/Green **(Use Bus & Carpool Logo)**

GENERAL NOTES

1. ALL GO & GA SERIES SIGNS SHALL HAVE FLAT SHEET DEMOUNTABLE TEXT AND BORDER COVERED WITH TYPE III SILVER SHEETING. BACKGROUND SHALL BE TYPE III GREEN, UNLESS OTHERWISE SPECIFIED. ALL OTHER GUIDE SIGNS SHALL HAVE TYPE III SILVER TEXT AND BORDER WITH TYPE II BACKGROUND SHEETING, UNLESS OTHERWISE SPECIFIED. THERE SHALL BE NO GAPS IN THE BORDER ON THE MAIN SIGN OF GO & GA SERIES SIGNS WITH THE EXIT PANELS. ALL OTHER GUIDE SIGNS HGSALL HAVE TYPE III TEXT AND BORDER.
2. ALL REGULATORY AND WARNING SIGNS SHALL HAVE TYPE II BACKGROUND SHEETING, UNLESS OTHERWISE SPECIFIED.
3. SHEETING SPECIFICALLY INTENDED FOR USE ON CONSTRUCTION SIGNS SHALL NOT BE PERMITTED.
4. ALL GO & GA SERIES PLANK SIGNS SHALL CONTAIN THE SIZE AND DATE OF MANUFACTURE, LOCATED IN THE LOWER LEFT CORNER OF THE FRONT FACE. THESE LETTERS AND NUMBERS SHALL BE 2" NON-REFLECTIVE WHITE. I.E. 3-90 10x15
5. REFER TO THE STANDARD HIGHWAY SIGNS MANUAL AS PUBLISHED BY THE USDOT - FHWA FOR EXACT DETAILS OF BORDERS, ETC

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION ~~BUREAU OF TRAFFIC~~
SIGNING STANDARDS

OVERHEAD MOUNTED GUIDE SIGNS

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FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
CM-5379(017)	12250	126	272

ITEM NO.	IDENT NO.	SIGN SIZE HEIGHT mm	SIGN SIZE WIDTH mm	TEXT	TEXT DIMENSIONS LETTER HEIGHT UC	LC	CAPS	RTE NO. OR SHIELD	ARROW	NUMERAL	NO. SIGNS REQ'D	SIGN AREA (m2) NOM AREA	SIGN AREA (m2) TOTAL AREA	REMARKS
		600	2400	EXIT 3B			250E			375E	1	1.44		Silver/Green
		600	4500	LAST EXIT BEFORE TOLL			250D				1	2.70		Black/Yellow
615.04	GO-9	3000	4500	33 Greenland Portsmouth 3/4 MILE	400 400	300 300	250E	900x900		450	1	13.50	17.64	Silver/Green
		600	2400	EXIT 3A			250E			375E	1	1.44		Silver/Green
		600	4500	PEASE TRADEPORT			250D				1	2.70		Green/Silver
615.04	GO-9A	3000	4500	NH Bus Terminal Park & Ride 1/2 MILE	400 400	300 300	250E 250E	900x900		450 250E	1	13.50	17.64	Silver/Green **(Use Bus & Carpool Logo)**
		600	2400	EXIT 3B			250E			375E	1	1.44		Silver/Green
		600		LAST EXIT BEFORE TOLL			250D				1	2.70		Black/Yellow
615.04	GO-9B			33 Greenland Portsmouth 3/4 MILE	400 400	300 300	250E	900x900		450 250E	1	13.50	17.64	Silver/Green
		600	2400	EXIT 3A			250E			375E	1	1.44		Silver/Green
		600		PEASE TRADEPORT			250D				1	2.70		Green/Silver
615.04	GO-9C			NH Bus Terminal Park & Ride 1/4 MILE	400 400	300 300	250E 250E	900x900		450 250E	1	13.50	17.64	Silver/Green **(Use Bus & Carpool Logo)**

ITEM NO.	IDENT NO.	SIGN SIZE HEIGHT mm	SIGN SIZE WIDTH mm	TEXT	TEXT DIMENSIONS LETTER HEIGHT UC	LC	CAPS	RTE NO. OR SHIELD	ARROW	NUMERAL	NO. SIGNS REQ'D	SIGN AREA (m2) NOM AREA	SIGN AREA (m2) TOTAL AREA	REMARKS

GENERAL NOTES

1. ALL GO & GA SERIES SIGNS SHALL HAVE FLAT SHEET DEMOUNTABLE TEXT AND BORDER COVERED WITH TYPE III SILVER SHEETING. BACKGROUND SHALL BE TYPE III GREEN, UNLESS OTHERWISE SPECIFIED. ALL OTHER GUIDE SIGNS SHALL HAVE TYPE III SILVER TEXT AND BORDER WITH TYPE II BACKGROUND SHEETING, UNLESS OTHERWISE SPECIFIED. THERE SHALL BE NO GAPS IN THE BORDER ON THE MAIN SIGN OF GO & GA SERIES SIGNS WITH THE EXIT PANELS. ALL OTHER GUIDE SIGNS HGSALL HAVE TYPE III TEXT AND BORDER.

2. ALL REGULATORY AND WARNING SIGNS SHALL HAVE TYPE II BACKGROUND SHEETING, UNLESS OTHERWISE SPECIFIED.

3. SHEETING SPECIFICALLY INTENDED FOR USE ON CONSTRUCTION SIGNS SHALL NOT BE PERMITTED.

4. ALL GO & GA SERIES PLANK SIGNS SHALL CONTAIN THE SIZE AND DATE OF MANUFACTURE, LOCATED IN THE LOWER LEFT CORNER OF THE FRONT FACE. THESE LETTERS AND NUMBERS SHALL BE 2" NON-REFLECTIVE WHITE. I.E. 3-90 10x15

5. REFER TO THE STANDARD HIGHWAY SIGNS MANUAL AS PUBLISHED BY THE USDOT - FHWA FOR EXACT DETAILS OF BORDERS, ETC

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STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION ~~BUREAU OF~~ TRAFFIC
SIGNING STANDARDS

OVERHEAD MOUNTED GUIDE SIGNS

FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
CM-5379(017)	12250	12.7	282

ITEM NO.	IDENT NO.	SIGN SIZE HEIGHT mm	SIGN SIZE WIDTH mm	TEXT	TEXT DIMENSIONS LETTER HEIGHT UC	LC	CAPS	RTE NO. OR SHIELD	ARROW	NUMERAL	NO. SIGNS REQ'D	SIGN AREA (m2) NOM AREA	SIGN AREA (m2) TOTAL AREA	REMARKS
		300	1200	A TOLL ROAD			150C							Black/Yellow
				SOUTH			200C/150C							Green/Silver
615.02	GA-1	1500	1200	95 →				600x600	150x300	300	1	2.16	2.16	BREAKAWAY 2-100mm Alum Post
		300	1200	A TOLL ROAD			150C							Black/Yellow
				SOUTH			200C/150C							Green/Silver
615.05	GA-2	1500	1200	95 ←				600x600	150x300	300	1	2.16	2.16	
				NH			150C	450x450						Silver/Green
				BUS TERMINAL			150C							
615.022	GA-3	1500	1800	PARK & RIDE →			150C		150x300		1	2.70	3.78	BREAKAWAY 2-100mm Alum Posts
615.05	GA-3A	300	1800	↑ PEASE TRADEPORT			150C		150x175		1	0.54		Green/Silver
615.05	GA-3B	300	1800	← PEASE GOLF COURSE			150B		150x225		1	0.54		Yellow/Blue
				TO 95 33			150C							
615.022	GA-4	1200	1800	↑				450x450	150x225	225	1	2.16	3.24	BREAKAWY 2-100mm Alum Posts
615.05	GA-4A	300	1800	← PARK & RIDE			150C		150x225		1	0.54		Silver/Green
615.05	GA-4B	300	1800	PEASE GOLF COURSE →			150B		150x225		1	0.54		Yellow/Blue
				TO			150C							
615.022	GA-5	1200	1800	95 33 →				450x450	150x300	225	1	2.16	3.24	BREAKAWAY 2-100mm Alum Posts
615.05	GA-5A	300	1800	↑ PARK & RIDE			150C		150x175		1	0.54		Silver'Green
615.05	GA-5B	300	1800	← PEASE TRADEPORT			150C		150x225		1	0.54		Green/Silver
				TO			150C							
615.022	GA-6	1200	1800	← 95 33				450x450	150x300	225	1	2.16	3.24	BREAKAWAY 2-100mm Alum Posts
615.05	GA-6A	300	1800	PEASE TRADEPORT →			150C		150x225		1	0.54		Green/Silver
615.05	GA-6B	300	1800	↑ PEASE GOLF COURSE			150B		150x175		1	0.54		Yellow/Blue
				EXIT			300D							Silver/Green
615.022	GA-7	1500	1800	3A ↗			450D		575x575	450D	1	2.70	2.70	BREAKAWAY 2-100mm Alum Posts
				EXIT			300D							Silver/Green
615.022	GA-8	1500	1800	3B ↗			450D		575x575	450D	1	2.70	2.70	BREAKAWAY 2-100mm Alum Posts
				EXIT			300D							Silver/Green
615.022	GA-12	1500	1800	3 ↗			450D		575x575	450D	1	2.70	2.70	BREAKAWAY 2-100mm Alum Posts
				NH			200C	600x600						Silver/Green
615.022	GA- 9	1500	3000	BUS TERMINAL PARK & RIDE EXIT 3			200C 200C 200D			250D	1	4.50	4.50	BREAKAWAY 2-100mm Alum Posts

ITEM NO.	IDENT NO.	SIGN SIZE HEIGHT mm	SIGN SIZE WIDTH mm	TEXT	TEXT DIMENSIONS LETTER HEIGHT UC	LC	CAPS	RTE NO. OR SHIELD	ARROW	NUMERAL	NO. SIGNS REQ'D	SIGN AREA (m2) NOM AREA	SIGN AREA (m2) TOTAL AREA	REMARKS
		600	2400	EXIT 3			150E				1	1.440		Silver/Green
		600	4500	PEASE TRADEPORT			150D				1	2.700		Green/Silver
615.04	GA-10	3000	4500	33 Greenland Portsmouth 1 MILE	400 400	300 300	250E	900x900		450 375E	1	13.500	17.64	Silver/Green **Mounted on existing Steel NB I-95 South of Exit 3**
		600	2400	EXIT 3			150E				1	1.44		Silver/Green
		600	4500	PEASE TRADEPORT			150D				1	2.70		Green/Silver
615.04	GA-11	2400	4500	33 Greenland Portsmouth ↗	400 400	300 300		900x900	700x700	450	1	10.80	14.94	Silver/Green **Mounted on existing Steel NB I-95 South of Exit 3**
		1500	3000	NH BUS TERMINAL PARK & RIDE EXIT 3A			200C 200C 200C 200D	600x600		250D	1	4.50	4.50	Silver/Green **Located SB North of Exit 5 Behind GR.** 2-100mm Alum Posts
615.02	GA-13													
		1500	3000	NH BUS TERMINAL PARK & RIDE EXIT 3A			200C 200C 200C 200D	600x600		250D	1	4.50	4.50	Silver/Green **Located on SB on ramp from Ports Circle** BREAKAWAY 2-100mm Alum Posts
615.022	GA-14													
		900	1200	JUNCTION 95			150C	600x600			1	1.08	1.08	Silver/Green 1-100mm Alum Post
615.02	GA-15													
		600	750	MOTORCYCLE PARKING ←			75c 75c		75x300		1	0.45	0.45	Green/Silver 1-100mm Alum Post
615.03	GA-16L													
		600	750	MOTORCYCLE PARKING →			75c 75c		75x300		1	0.45	0.45	Green/Silver 1-100mm Alum Post
615.03	GA-16R													

GENERAL NOTES

1. ALL GO & GA SERIES SIGNS SHALL HAVE FLAT SHEET DEMOUNTABLE TEXT AND BORDER COVERED WITH TYPE III SILVER SHEETING. BACKGROUND SHALL BE TYPE III GREEN, UNLESS OTHERWISE SPECIFIED. ALL OTHER GUIDE SIGNS SHALL HAVE TYPE III SILVER TEXT AND BORDER WITH TYPE II BACKGROUND SHEETING, UNLESS OTHERWISE SPECIFIED. THERE SHALL BE NO GAPS IN THE BORDER ON THE MAIN SIGN OF GO & GA SERIES SIGNS WITH THE EXIT PANELS. ALL OTHER GUIDE SIGNS HGSALL HAVE TYPE III TEXT AND BORDER.
2. ALL REGULATORY AND WARNING SIGNS SHALL HAVE TYPE II BACKGROUND SHEETING, UNLESS OTHERWISE SPECIFIED.
3. SHEETING SPECIFICALLY INTENDED FOR USE ON CONSTRUCTION SIGNS SHALL NOT BE PERMITTED.
4. ALL GO & GA SERIES PLANK SIGNS SHALL CONTAIN THE SIZE AND DATE OF MANUFACTURE, LOCATED IN THE LOWER LEFT CORNER OF THE FRONT FACE. THESE LETTERS AND NUMBERS SHALL BE 2" NON-REFLECTIVE WHITE. I.E. 3-90 10x15
5. REFER TO THE STANDARD HIGHWAY SIGNS MANUAL AS PUBLISHED BY THE USDOT - FHWA FOR EXACT DETAILS OF BORDERS, ETC

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION — BUREAU OF TRAFFIC
SIGNING STANDARDS

GROUND MOUNTED GUIDE SIGNS

C:\PROJECTS\12250\SIGNPAK1\PORTS_03.XLS

FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
CM-5379(017)	12250	128	282

ITEM NO.	IDENT NO.	SIGN SIZE HEIGHT mm	SIGN SIZE WIDTH mm	TEXT	TEXT DIMENSIONS LETTER HEIGHT UC	TEXT DIMENSIONS LETTER HEIGHT LC	TEXT DIMENSIONS LETTER HEIGHT CAPS	RTE NO. OR SHIELD	ARROW	NUMERAL	NO. SIGNS REQ'D	SIGN AREA (m2) NOM AREA	SIGN AREA (m2) TOTAL AREA	REMARKS
615.03	R1-1	750	750	STOP			250C				13	0.5625	7.3125	RED/SILVER 1-100mm Alum Post
615.03	R3-1	600	600								1	0.36	0.63	RED/BLACK/SILVER
615.06	R3-1a	450	600	NO RIGHT TURN			150C/100C 100C					0.27		BLACK/SILVER 1-100mm Alum Post
615.03	R3-2	600	600								1	0.36	0.63	RED/BLACK/SILVER
615.06	R3-2a	450	600	NO LEFT TURN			150C/100C 100C					0.27		BLACK/SILVER 1-100mm Alum Post
615.06	R3-3	600	600	NO TURNS			150D 125D				1	0.36	0.36	BLACK/SILVER
615.03	R3-4	900	900								1	0.81	0.81	RED/BLACK/SILVER 1-100mm Alum Post
615.03	R4-7a	750	600	KEEP RIGHT			125D 125D				10	0.45	4.5	BLACK/SILVER 1-100mm Alum Post
615.06	H-1	450	450								10	0.2025	2.025	SOLID YELLOW TYPE III SHEETING 1.2 m MOUNTING HEIGHT
615.03	R3-9B	600	900	CENTER LANE ONLY			75E 75E 75E				2	0.54	1.08	SILVER/BLACK 1-100mm Alum Post
615.06	R5-1	750	750	DO NOT ENTER			100D 100D				10	0.5625	5.625	RED/SILVER TYPE III SHEETING
615.03	R5-1a	600	900	WRONG WAY			150D 150D				2	0.54	1.08	RED/SILVER 1-100mm Alum Post

ITEM NO.	IDENT NO.	SIGN SIZE HEIGHT mm	SIGN SIZE WIDTH mm	TEXT	TEXT DIMENSIONS LETTER HEIGHT UC	TEXT DIMENSIONS LETTER HEIGHT LC	TEXT DIMENSIONS LETTER HEIGHT CAPS	RTE NO. OR SHIELD	ARROW	NUMERAL	NO. SIGNS REQ'D	SIGN AREA (m2) NOM AREA	SIGN AREA (m2) TOTAL AREA	REMARKS
615.06	R6-1R	300	900	ONE WAY			100D				2	0.27	0.54	BLACK/SILVER
615.03	R7-8	450	600	RESERVED PARKING			75B 75B 75B				10	0.27	2.7	GREEN/BLUE/SILVER 1-100mm Alum Post
615.06	R7-8a	225	450	VAN ACCESSIBLE			50D 37.5D				10	0.1012	1.012	GREEN/SILVER
615.03	R3-8a	750	900	ONLY ONLY			100D				3	0.675	2.025	BLACK/SILVER 1-100mm Alum Post
615.03	R3-8b	750	1200	ONLY			100D				1	0.9	0.9	BLACK/SILVER 1-100mm Alum Post
615.03	R3-8c	750	1200	ONLY ONLY ONLY			100D				2	0.9	1.8	BLACK/SILVER 1-100mm Alum Post
615.03	R3-8d	750	1500	ONLY ONLY			100D				1	1.125	1.125	BLACK/SILVER 2-100mm Alum Post

GENERAL NOTES

1. ALL GO & GA SERIES SIGNS SHALL HAVE FLAT SHEET DEMOUNTABLE TEXT AND BORDER COVERED WITH TYPE III SILVER SHEETING. BACKGROUND SHALL BE TYPE III GREEN, UNLESS OTHERWISE SPECIFIED. ALL OTHER GUIDE SIGNS SHALL HAVE TYPE III SILVER TEXT AND BORDER WITH TYPE II BACKGROUND SHEETING, UNLESS OTHERWISE SPECIFIED. THERE SHALL BE NO GAPS IN THE BORDER ON THE MAIN SIGN OF GO & GA SERIES SIGNS WITH THE EXIT PANELS. ALL OTHER GUIDE SIGNS HGSALL HAVE TYPE III TEXT AND BORDER.

2. ALL REGULATORY AND WARNING SIGNS SHALL HAVE TYPE II BACKGROUND SHEETING, UNLESS OTHERWISE SPECIFIED.

3. SHEETING SPECIFICALLY INTENDED FOR USE ON CONSTRUCTION SIGNS SHALL NOT BE PERMITTED.

4. ALL GO & GA SERIES PLANK SIGNS SHALL CONTAIN THE SIZE AND DATE OF MANUFACTURE, LOCATED IN THE LOWER LEFT CORNER OF THE FRONT FACE. THESE LETTERS AND NUMBERS SHALL BE 2" NON-REFLECTIVE WHITE. I.E. 3-90 10x15

5. REFER TO THE STANDARD HIGHWAY SIGNS MANUAL AS PUBLISHED BY THE USDOT - FHWA FOR EXACT DETAILS OF BORDERS, ETC

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION ~~BUREAU OF~~ TRAFFIC
SIGNING STANDARDS

GROUND MOUNTED GUIDE SIGNS

FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
CM-5379(017)	12250	129	282

C:\PROJECTS\12250\SIGNPAK1\PORTS_04.XLS

ITEM NO.	IDENT NO.	SIGN SIZE HEIGHT mm	SIGN SIZE WIDTH mm	TEXT	TEXT DIMENSIONS LETTER HEIGHT UC	LC	CAPS	RTE NO. OR SHIELD	ARROW	NUMERAL	NO. SIGNS REQ'D	SIGN AREA (m2) NOM AREA	SIGN AREA (m2) TOTAL AREA	REMARKS
615.03	R3-8c	750	1500	ONLY			100D				1	1.125	1.125	BLACK/SILVER 1-100mm Alum Post
615.03	D4-2L	900	750	NH PARK & RIDE ←			100D 100D 100D				2	0.675	1.35	SILVER/GREEN 1-100mm Alum Post
615.03	D4-2R	900	750	NH PARK & RIDE →			100D 100D 100D				3	0.675	2.025	SILVER/GREEN 1-100mm Alum Post
615.03	D4-2S	900	750	NH PARK & RIDE ↑			100D 100D 100D				1	0.675	0.675	SILVER/GREEN 1-100mm Alum Post
615.06	D4-2a	450	750	BUS SERVICE			100D 100D				6	0.3375	2.025	GREEN/SILVER
615.03	CP-1	1200	1200	COMMUTER PARKING ↑ →			150C 150C		150x225 150x300		1	1.44	1.44	SILVER/GREEN 1-100mm Alum Post
615.03	CP-2	900	1200	COMMUTER PARKING →			150C 150C		150x300		1	1.44	1.44	SILVER/GREEN 1-100mm Alum Post
615.03	CP-3	900	1200	COMMUTER PARKING ←			150C 150C		150x300		2	1.44	2.88	SILVER/GREEN 1-100mm Alum Post
615.03	CP-4	1200	1500	TERMINAL DROPOFFS & PICKUPS ONLY ←			200C 150C 150C 150C		150x300		1	1.80	1.8	GREEN/SILVER 1-100mm Alum Post
615.03	CP-5	1200	1500	TERMINAL TAXIS, SHUTTLES, VANPOOLS, PICKUPS, DROPOFFS →			200C 150C 150C 150C		150x300		1	1.80	1.8	GREEN/SILVER 1-100mm Alum Post
615.03	CP-6	1200	1500	TERMINAL TAXIS, SHUTTLES, VANPOOLS, PICKUPS, DROPOFFS ↑			200C 150C 150C 150C		150x225		1	1.80	1.80	GREEN/SILVER 1-100mm Alum Post
615.03	CP-7	600	900	EXIT ←			200C		200x400		3	0.54	1.62	SILVER/GREEN 1-100mm Alum Post
615.03	CP-8	600	900	EXIT →			200C		200x400		2	0.54	1.08	SILVER/GREEN 1-100mm Alum Post
615.03	CP-9	1200	1200	ALL BUSES ↑			200C 200C		200x300		1	1.44	1.44	SILVER/GREEN 1-100mm Alum Post
615.03	CP-10	1200	1500	BUSES ONLY NO CARS BEYOND THIS POINT			200C 200C 200C 200C				1	1.80	1.80	BLACK/SILVER 1-100mm Alum Post
615.06	CP-10A	600	1500	ALL BUSES MUST USE DOCK AREA			200C 200C				1	0.90	0.90	RED/SILVER 1-100mm Alum Post
615.03	CP-11	1200	900	PASSENGER DROPOFF AT DOCKING AREA ONLY			100C 100C 100C 100C 100C				4	1.08	4.32	RED/SILVER 1-100mm Alum Post

GENERAL NOTES

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4. ALL GO & GA SERIES PLANK SIGNS SHALL CONTAIN THE SIZE AND DATE OF MANUFACTURE, LOCATED IN THE LOWER LEFT CORNER OF THE FRONT FACE. THESE LETTERS AND NUMBERS SHALL BE 2" NON-REFLECTIVE WHITE. I.E. 3-90 10x15
5. REFER TO THE STANDARD HIGHWAY SIGNS MANUAL AS PUBLISHED BY THE USDOT - FHWA FOR EXACT DETAILS OF BORDERS, ETC

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION ~~BUREAU OF~~ TRAFFIC
SIGNING STANDARDS

GROUND MOUNTED GUIDE SIGNS

C:\PROJECTS\12250\SIGNPAK1\PORTS_05.XLS

FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
CM-5379(017)	12250	130	282

ITEM NO.	IDENT NO.	SIGN SIZE HEIGHT mm	SIGN SIZE WIDTH mm	TEXT	TEXT DIMENSIONS LETTER HEIGHT UC	LC	CAPS	RTE NO. OR SHIELD	ARROW	NUMERAL	NO. SIGNS REQ'D	SIGN AREA (m2) NOM AREA	SIGN AREA (m2) TOTAL AREA	REMARKS
615.03	CP-12	1200	750	SHORT TERM PARKING NO OVERNIGHT			150C 150C 150C 75C 75C				1	0.90	0.9	BLACK/SILVER 1-100mm Alum Post
615.03	CP-13	450	300	15 MINUTE PARKING ONLY			50C 50C 50C 50C				23	0.135	3.105	GREEN/SILVER 1-100mm Alum Post
615.03	CP-14	450	300	TAXIS ONLY			75C 75C				6	0.135	0.81	GREEN/SILVER 1-100mm Alum Post
615.03	CP-15	750	900	NOTICE THIS LOT IS PROVIDED FOR THE CONVENIENCE OF COMMUTERS. PARK AT YOUR OWN RISK			100C 75B 75B 75B 75B				1	0.675	0.675	BLACK/SILVER 1-100mm Alum Post
615.03	CP-16	750	900	NH RIDESHARE 1-800-462-8707 (NH ONLY) OR (603) 271-4043			125C 125C 150C/43.75C 37.5C 62.5C				1	0.675	0.675	SILVER/GREEN 1-100mm Alum Post

ITEM NO.	IDENT NO.	SIGN SIZE HEIGHT mm	SIGN SIZE WIDTH mm	TEXT	TEXT DIMENSIONS LETTER HEIGHT UC	LC	CAPS	RTE NO. OR SHIELD	ARROW	NUMERAL	NO. SIGNS REQ'D	SIGN AREA (m2) NOM AREA	SIGN AREA (m2) TOTAL AREA	REMARKS
615.03	W4-1	1200	1200								1	1.44	1.44	Black/Yellow 1-100mm Alum Post
615.03	W4-2	900	900								3	0.81	2.43	Black/Yellow 1-100mm Alum Post
615.03	W13-2	1500	1200				200E 400E 150E				1	1.80	1.8	Black/Yellow 2-100mm Alum Posts
615.03	W9-1	900	900				150D 150D 150D				2	0.81	1.62	Black/Yellow 1-100mm Alum Post

GENERAL NOTES

1. ALL GO & GA SERIES SIGNS SHALL HAVE FLAT SHEET DEMOUNTABLE TEXT AND BORDER COVERED WITH TYPE III SILVER SHEETING. BACKGROUND SHALL BE TYPE III GREEN, UNLESS OTHERWISE SPECIFIED. ALL OTHER GUIDE SIGNS SHALL HAVE TYPE III SILVER TEXT AND BORDER WITH TYPE II BACKGROUND SHEETING, UNLESS OTHERWISE SPECIFIED. THERE SHALL BE NO GAPS IN THE BORDER ON THE MAIN SIGN OF GO & GA SERIES SIGNS WITH THE EXIT PANELS. ALL OTHER GUIDE SIGNS HGSALL HAVE TYPE III TEXT AND BORDER.
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5. REFER TO THE STANDARD HIGHWAY SIGNS MANUAL AS PUBLISHED BY THE USDOT - FHWA FOR EXACT DETAILS OF BORDERS, ETC

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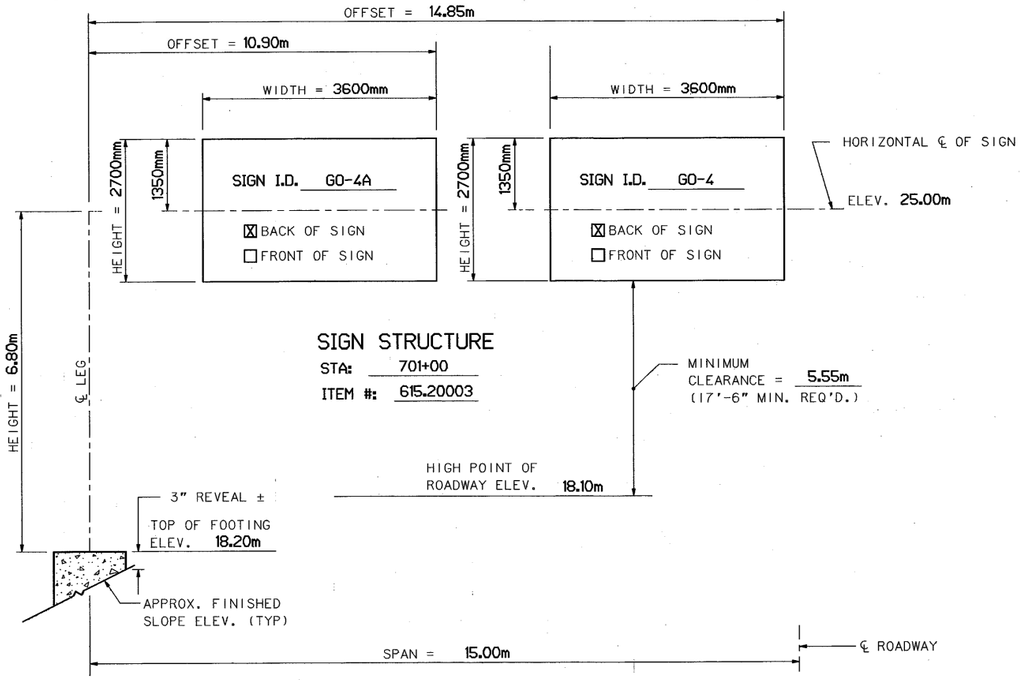
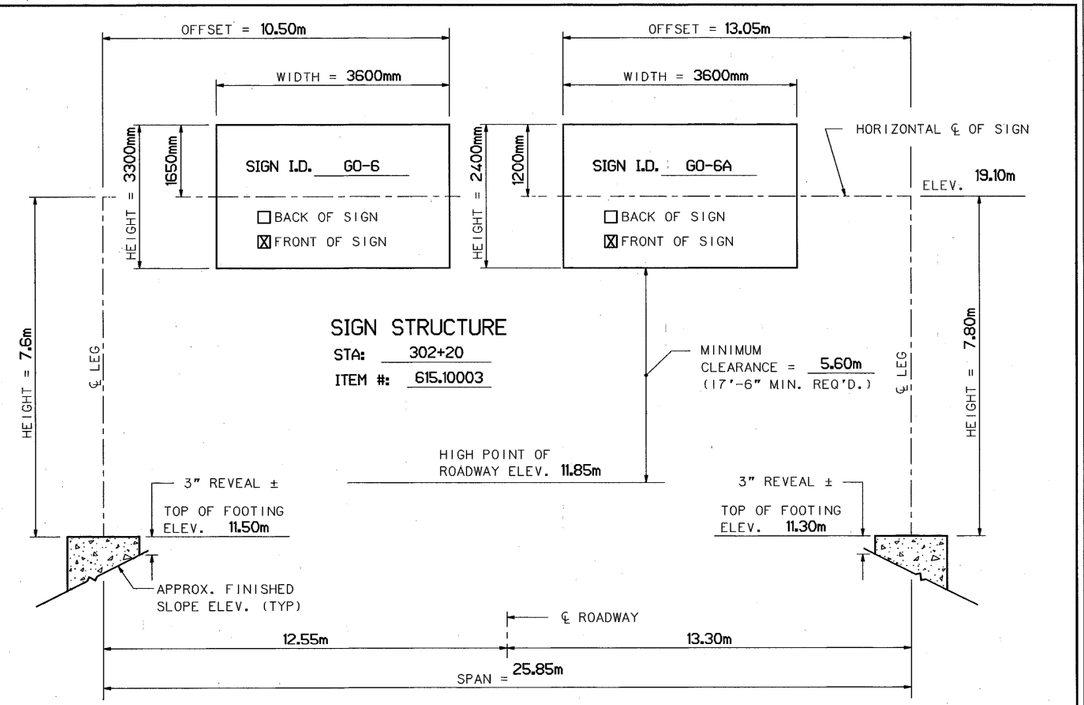
STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION BUREAU OF TRAFFIC
SIGNING STANDARDS

GROUND MOUNTED GUIDE SIGNS

FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
CM-5379(017)	12250	131	232



TYPE : ONE-LEG OVERHEAD CANTILEVER / 2 SIGNS



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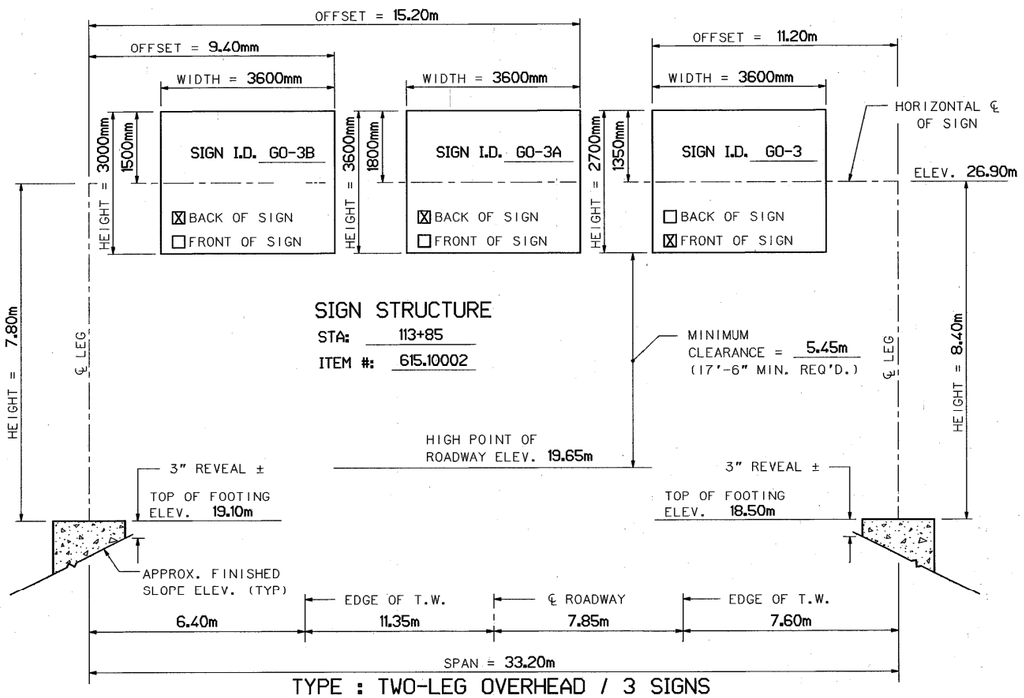
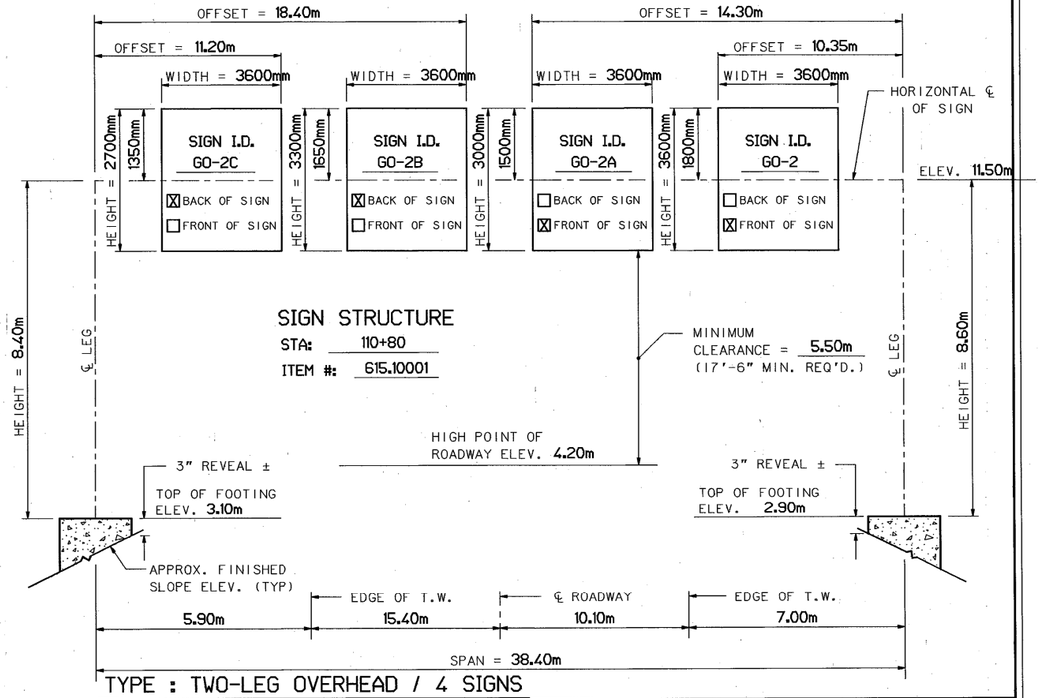


TYPE : TWO-LEG OVERHEAD / 3 SIGNS



TYPE : TWO-LEG OVERHEAD / 4 SIGNS

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	DESCRIPTION

NOTEBOOKS

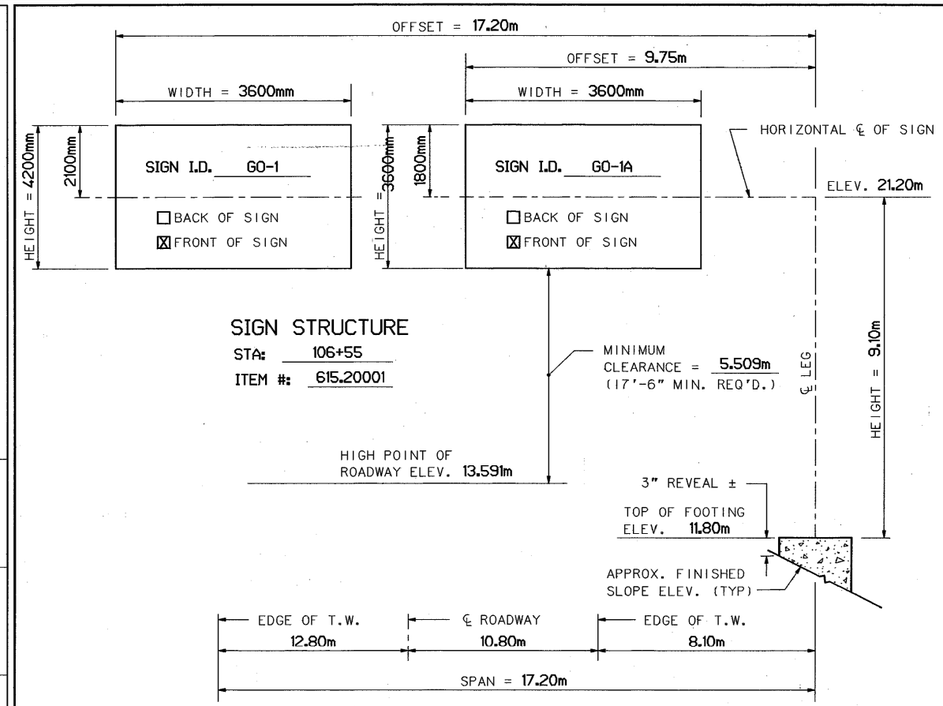
	BOOK	PAGE
	BOOK	PAGE
	BOOK	PAGE

	DATE
EXISTING DETAIL	
PROPOSED DESIGN	
SHEET CHECKED	
AS BUILT DETAILS	

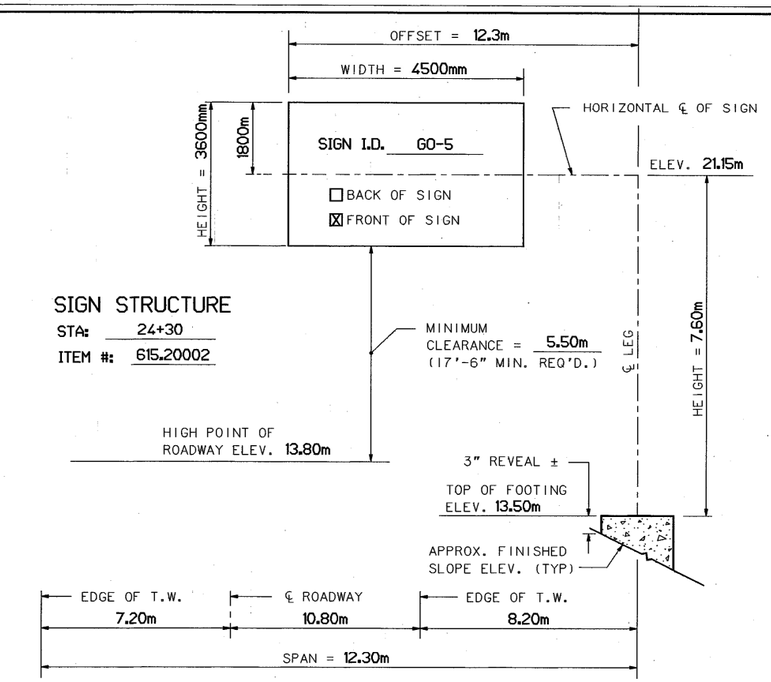
STATE OF NEW HAMPSHIRE * DEPARTMENT OF TRANSPORTATION * BUREAU OF TRAFFIC - SIGNING STANDARDS

OVERHEAD SIGN STRUCTURE DETAILS

REVISION DATE	WINDOW	.FGB	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
1-22-93	SIGNSET2	DETAILS	CM-5379(017)	12250	132	282



TYPE : ONE-LEG OVERHEAD CANTILEVER / 2 SIGNS



TYPE : ONE-LEG OVERHEAD CANTILEVER / 1 SIGNS

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION

NOTEBOOKS

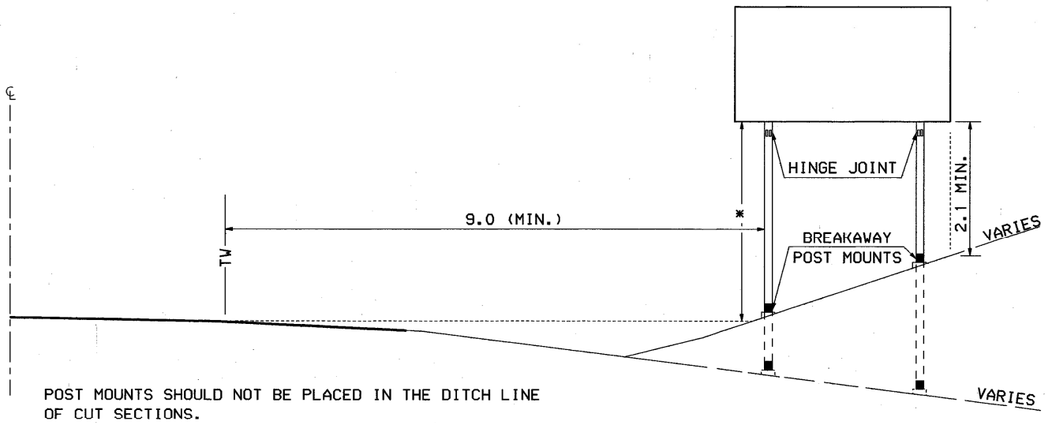
BOOK		PAGE
BOOK		PAGE
BOOK		PAGE

EXISTING DETAIL	DATE
PROPOSED DESIGN	DATE
SHEET CHECKED	DATE
AS BUILT DETAILS	DATE

STATE OF NEW HAMPSHIRE * DEPARTMENT OF TRANSPORTATION * BUREAU OF TRAFFIC - SIGNING STANDARDS

OVERHEAD SIGN STRUCTURE DETAILS

REVISION DATE	WINDOW	.FGB	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
1-22-93	SIGNSET3	DETAILS	CM-5379(017)	12250	133	282

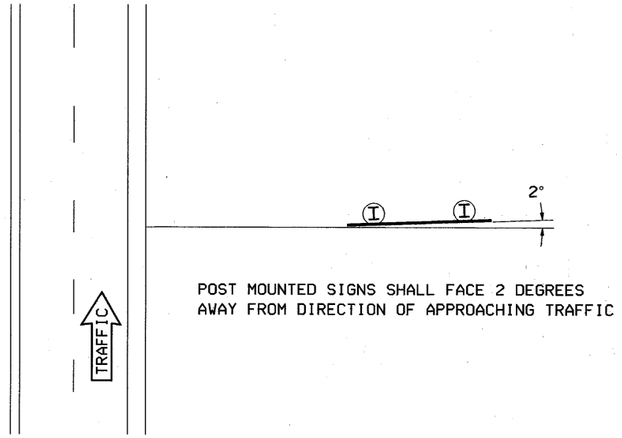


POST MOUNTS SHOULD NOT BE PLACED IN THE DITCH LINE OF CUT SECTIONS.

BREAKAWAY POST MOUNTS ARE NOT REQUIRED FOR SIGN INSTALLATIONS THAT ARE PROTECTED BY GUARDRAIL OR OTHER POSITIVE BARRIER.

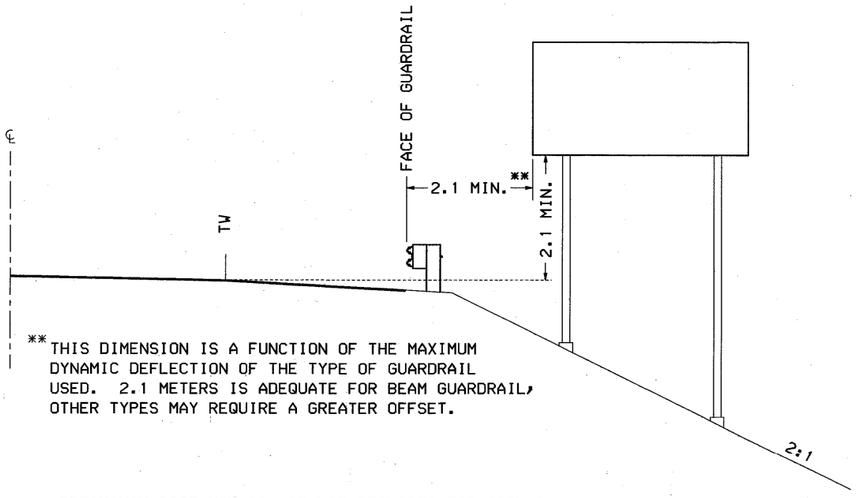
* SIGN HEIGHT SHALL BE IN ACCORDANCE WITH *MUTCD* PART II

BREAKAWAY SIGN INSTALLATION



POST MOUNTED SIGNS SHALL FACE 2 DEGREES AWAY FROM DIRECTION OF APPROACHING TRAFFIC

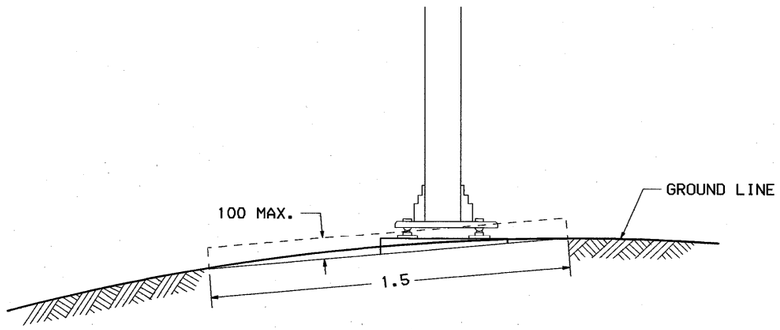
SIGN ORIENTATION



** THIS DIMENSION IS A FUNCTION OF THE MAXIMUM DYNAMIC DEFLECTION OF THE TYPE OF GUARDRAIL USED. 2.1 METERS IS ADEQUATE FOR BEAM GUARDRAIL, OTHER TYPES MAY REQUIRE A GREATER OFFSET.

BREAKAWAY POST MOUNTS ARE NOT REQUIRED FOR SIGN INSTALLATIONS THAT ARE PROTECTED BY GUARDRAIL OR OTHER POSITIVE BARRIER.

GUARDRAIL PROTECTED SIGN INSTALLATION



MAXIMUM BREAKAWAY STUB HEIGHT

BREAKAWAY SUPPORTS PLACED ON ROADSIDE SLOPES SHALL NOT ALLOW IMPACTING VEHICLES TO SNAG ON EITHER THE FOUNDATION OR ANY SUBSTANTIAL REMAINS OF THE SUPPORT. SURROUNDING TERRAIN SHALL BE GRADED TO PERMIT VEHICLES TO PASS OVER ANY NON-BREAKAWAY PORTION OF THE SIGN INSTALLATION WHICH REMAINS IN THE GROUND OR RIGIDLY ATTACHED TO THE FOUNDATION.

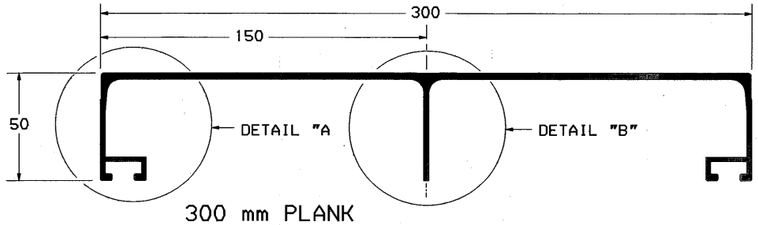
ALL DIMENSIONS SHOWN ARE IN MILLIMETERS OR METERS. WHOLE NUMBERS INDICATE MILLIMETERS, DECIMAL NUMBERS INDICATE METERS UNLESS OTHERWISE NOTED.

STATE OF NEW HAMPSHIRE

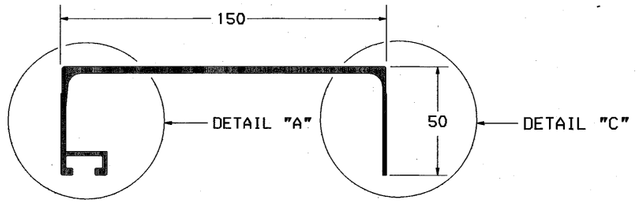
DEPARTMENT OF TRANSPORTATION ◦ BUREAU OF HIGHWAY DESIGN

LOCATION OF STEEL POST MOUNTED TRAFFIC SIGNS

REVISION DATE	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
10-15-97	PS-1D	M-DETAIL	CM-5379(017)	12250	134	282



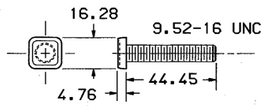
300 mm PLANK



150 mm PLANK

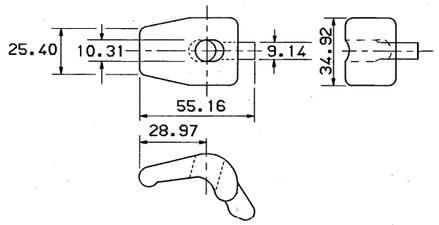
EXTRUDED ALUMINUM SIGN PLANK

ASTM B 221M, ALLOY 6061-T6



POST CLIP BOLT

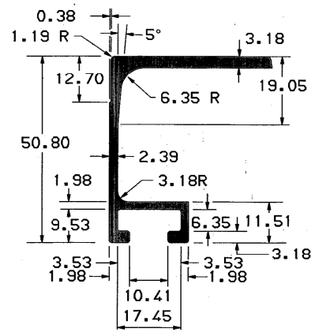
ASTM B 211M, ALLOY 2024-T4 OR 6061-T6



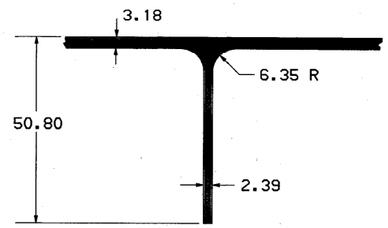
POST CLIP

ASTM B 108, ALLOY 356.0-T6

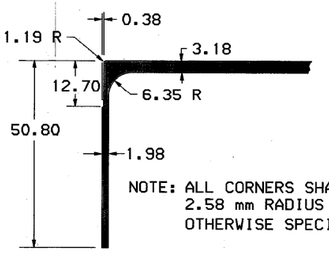
ALL DIMENSIONS SHOWN ARE IN MILLIMETERS



DETAIL "A"



DETAIL "B"

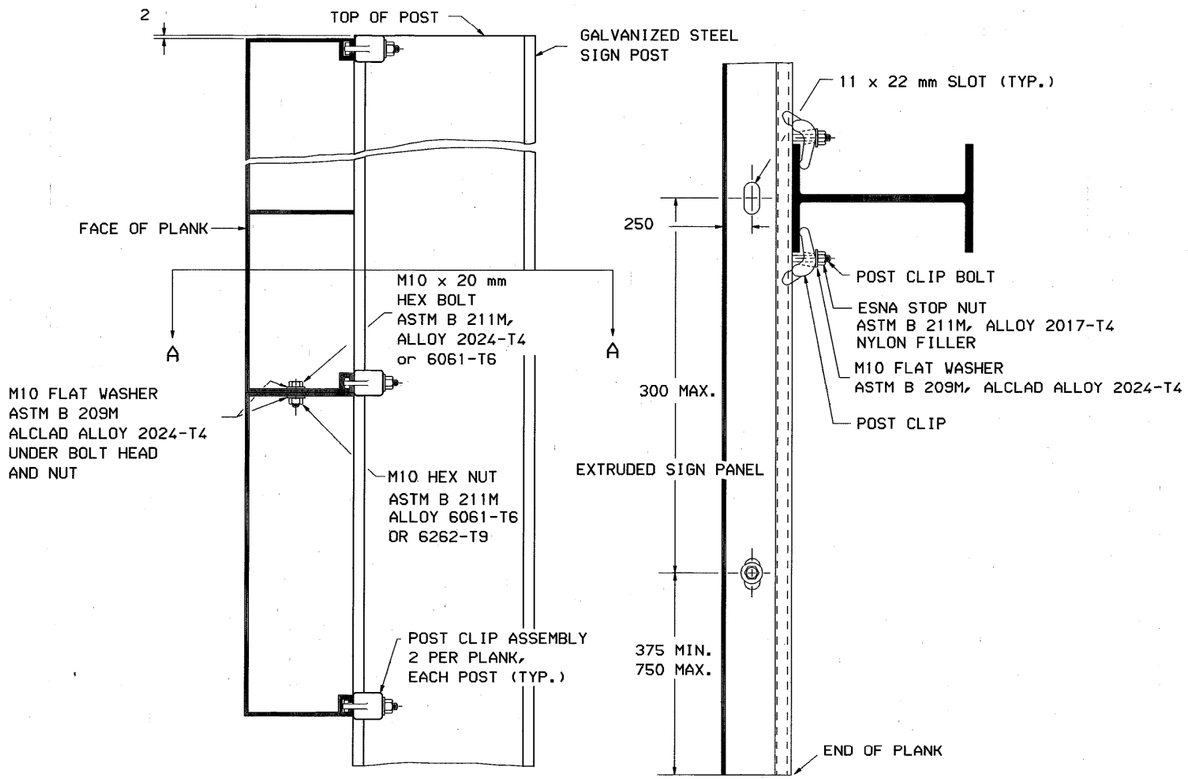


NOTE: ALL CORNERS SHALL BE 2.58 mm RADIUS UNLESS OTHERWISE SPECIFIED.

DETAIL "C"

STIFFENER DETAILS

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS



END VIEW

SECTION A-A

GENERAL NOTES :

1. GAP BETWEEN ANY TWO ASSEMBLED PLANK SECTIONS SHALL NOT EXCEED 2 mm.
2. ALLOWABLE LATERAL BOW SHALL NOT EXCEED ± 3 mm.
3. ALL PLANK SECTIONS SHALL BE ONE PIECE FOR THE ENTIRE WIDTH OF SIGN SPECIFIED, AND SHALL NOT EXCEED ± 3 mm FROM THE LENGTH SPECTIFIED.
4. FOR EXTRUDED PLANK SIGNS WITH AN OVERALL HEIGHT IN EVEN METERS, ALL PLANK SECTIONS SHALL BE 300 mm WIDE.
5. FOR EXTRUDED PLANK SIGNS WITH AN OVERALL HEIGHT IN INTERVALS OF 150 mm, ONE 150 mm WIDE PLANK SECTION SHALL BE AT THE TOP OR BOTTOM OF THE SIGN. ALL OTHER PLANK SECTIONS SHALL BE 300 mm WIDE.
6. ALL ASSEMBLY HARDWARE SHALL BE ALUMINUM ALLOY AS SHOWN.

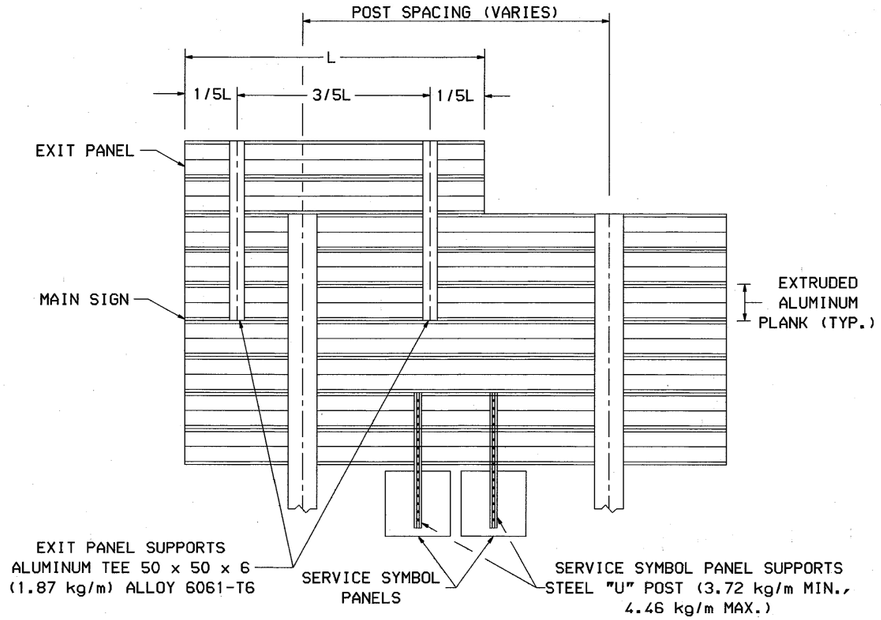
ALL DIMENSIONS SHOWN ARE IN MILLIMETERS OR METERS.
WHOLE NUMBERS INDICATE MILLIMETERS, DECIMAL NUMBERS INDICATE METERS UNLESS OTHERWISE NOTED.

STATE OF NEW HAMPSHIRE 1 OF 2

DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF HIGHWAY DESIGN

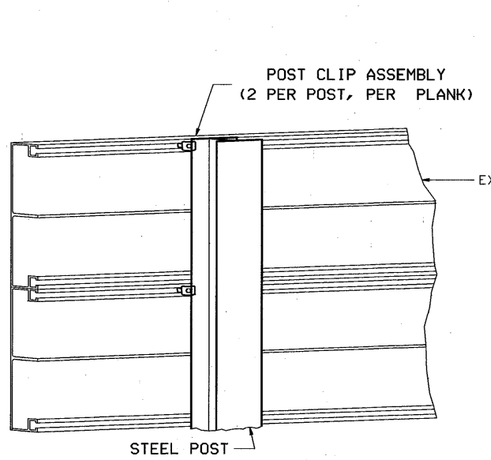
ALUMINUM PLANK DETAILS

REVISION DATE	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
10-1-97	PS-2D	M-DETAIL	CM-5379(017)	12250	135	282



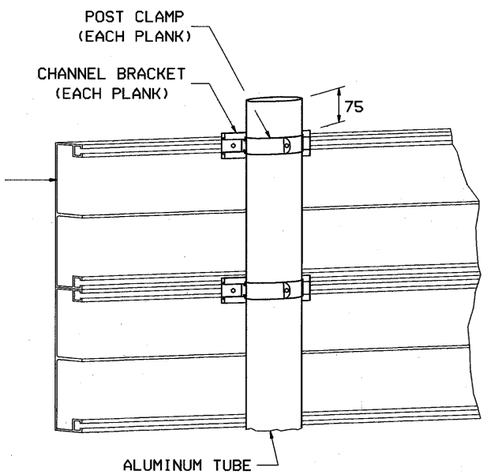
ATTACHMENT OF AUXILIARY PANELS (BACK VIEW)

1. EXIT PANELS SHALL BE MOUNTED TO THE RIGHT SIDE OF THE MAIN SIGN FOR RIGHT-HAND EXIT RAMPS, OR TO THE LEFT FOR LEFT-HAND EXIT RAMPS. SUPPORTS SHALL EXTEND TO THE TOP OF THE EXIT PANEL AND SHALL OVERLAP THE MAIN SIGN BY A MINIMUM OF 3 FULL PLANKS AS SHOWN.
2. SERVICE SYMBOL PANELS SHALL BE MOUNTED IMMEDIATELY BELOW THE MAIN SIGN AND CENTERED LATERALLY WITHIN THE WIDTH OF THE SIGN. SUPPORTS SHALL OVERLAP THE MAIN SIGN BY A MINIMUM OF 2 FULL PLANKS AS SHOWN.
3. POST CLIP ASSEMBLIES SHALL BE INSTALLED ON BOTH SIDES OF EACH AUXILIARY PANEL SUPPORT AT EACH PLANK, AS WELL AS AT EACH END OF BOTH SUPPORTS.



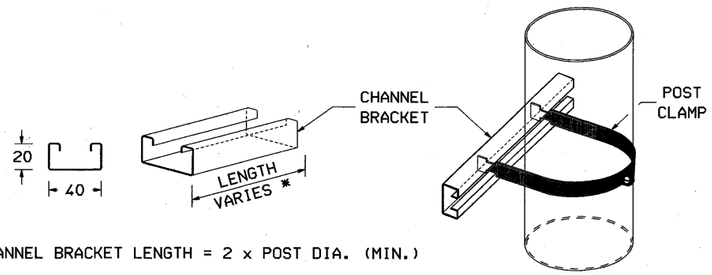
PLANK MOUNTED ON STEEL POST

1. POST CLIP ASSEMBLIES SHALL BE INSTALLED ON BOTH SIDES OF EACH POST AT EACH PLANK AS WELL AS AT THE TOP AND BOTTOM OF THE SIGN.
2. STEEL POSTS SHALL BE FLUSH WITH TOP OF SIGN, AND SHALL NOT EXTEND ONTO AUXILIARY PANELS.



PLANK MOUNTED ON TUBING

1. POST CLAMP ASSEMBLIES SHALL BE INSTALLED AT EACH PLANK, AS WELL AS AT THE TOP AND BOTTOM OF THE SIGN.
2. TUBES SHALL NOT BE USED AS AUXILIARY PANEL SUPPORTS.



* CHANNEL BRACKET LENGTH = 2 x POST DIA. (MIN.)

P-4100	CHANNEL	1.9 mm	P-2046-E POST CLAMP 76.2 mm DIA. 2.8 mm
P-4100-T	CHANNEL	1.6 mm	P-1120-E POST CLAMP 101.6 mm DIA. 3.0 mm
P-4100-HS	CHANNEL	1.9 mm	P-2062-E POST CLAMP 127.0 mm DIA. 3.1 mm

POST CLAMP ASSEMBLIES

1. HARDWARE SHALL BE UNISTRUT OR EQUAL
2. FINISH SHALL BE ELECTRO-GALVANIZED
3. USE 8 mm STAINLESS STEEL CAP SCREW WITH 22 mm O.D. WASHER & LOCKNUT FOR BRACKET TO SIGN CONNECTION

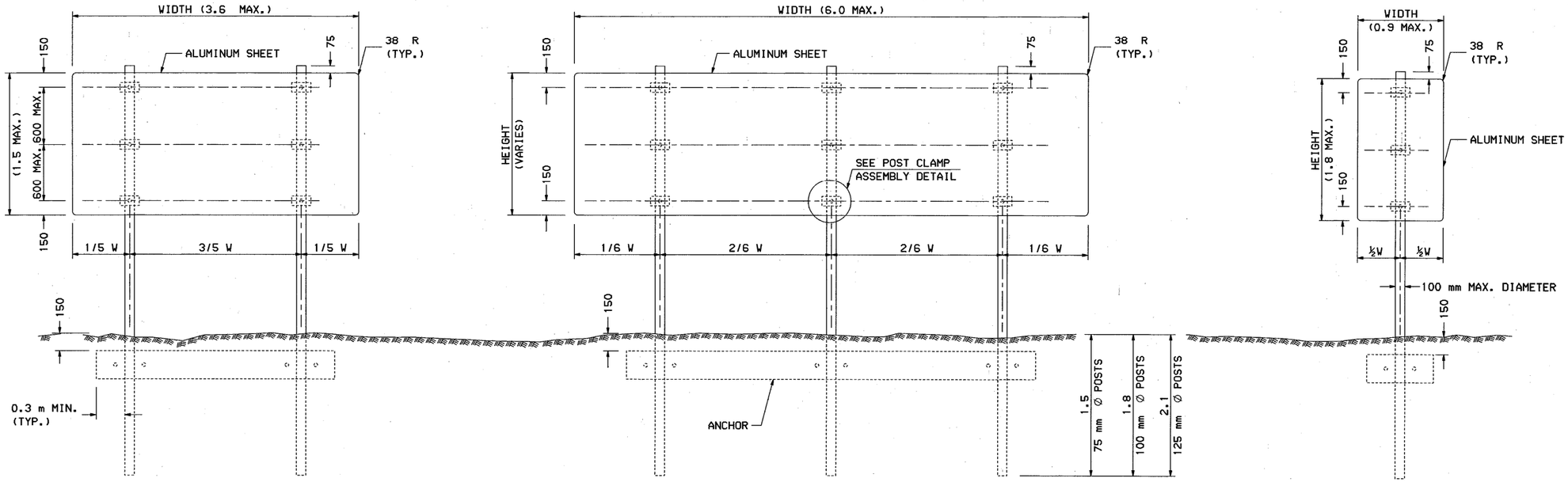
ALL DIMENSIONS SHOWN ARE IN MILLIMETERS OR METERS.
WHOLE NUMBERS INDICATE MILLIMETERS, DECIMAL NUMBERS INDICATE METERS UNLESS OTHERWISE NOTED.

STATE OF NEW HAMPSHIRE 2 OF 2

DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF HIGHWAY DESIGN

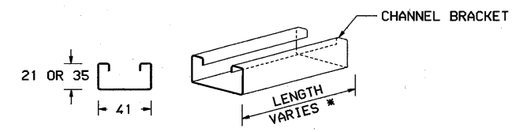
ALUMINUM PLANK DETAILS

REVISION DATE	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
10-1-97	PS-2AD	M-DETAIL	CM-5379(017)	12250	136	282



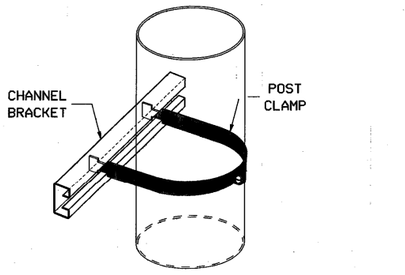
ALUMINUM POST SPACING

NOTE: SPACING MAY ALSO BE USED FOR STEEL "U" POST MOUNTED SIGNS



* CHANNEL BRACKET LENGTH = 2 x POST DIA. (MIN.)

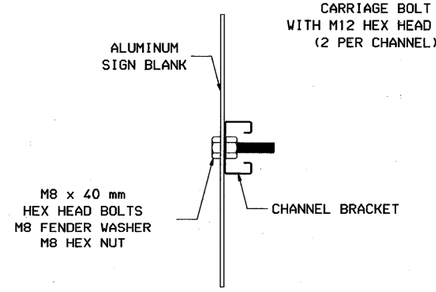
P-4100	CHANNEL	1.9 mm
P-4100T	CHANNEL	1.6 mm
P-4100HS	CHANNEL	1.9 mm



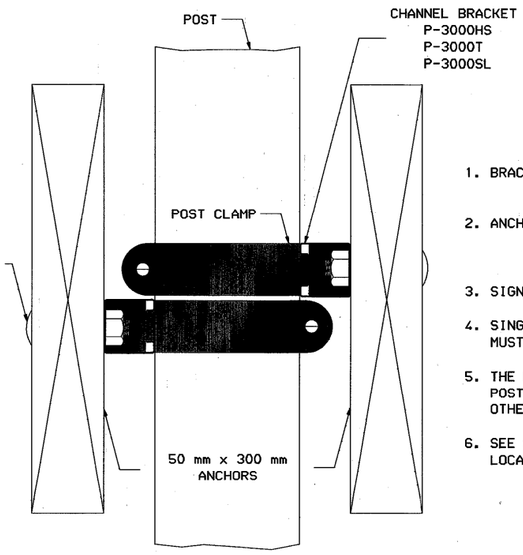
P-2046-E	POST CLAMP	76.2 mm DIA.	2.8 mm
P-1120-E	POST CLAMP	101.6 mm DIA.	3.0 mm
P-2062-E	POST CLAMP	127.0 mm DIA.	3.1 mm

POST CLAMP ASSEMBLIES

1. HARDWARE SHALL BE UNISTRUT OR EQUAL
2. FINISH SHALL BE ELECTRO-GALVANIZED



SIGN BLANK ATTACHMENT DETAIL



ANCHOR DETAIL

GENERAL NOTES

1. BRACKETS: ALL SIGNS TO BE FASTENED TO POSTS WITH POST CLAMP ASSEMBLIES AS SHOWN.
2. ANCHORS: USE 2 PIECES OF 50 mm x 300 mm ROUGH PLANK (PRESSURE TREATED) CLAMPED TO POST WITH A MINIMUM OF 0.3 m OVERHANG, TO BE PARALLEL WITH GROUND LINE.
3. SIGN HEIGHT SHALL BE IN ACCORDANCE WITH *MUTCD* PART II.
4. SINGLE POST SIGNS MAY BE INSTALLED ADJACENT TO TRAFFIC MULTIPLE POST SIGNS MUST BE PROTECTED BY GUARDRAIL OR OTHER POSITIVE BARRIER.
5. THE MINIMUM HORIZONTAL CLEARANCE TO THE NEAR EDGE OF ANY MULTIPLE ALUMINUM POST NON-BREAKAWAY MOUNT SIGN SHALL BE 2.1 m MIN. FROM FACE OF BEAM GUARDRAIL. OTHER TYPES OF GUARDRAIL OR BARRIER MAY REQUIRE A GREATER OFFSET.
6. SEE SIGN TEXT LAYOUT SHEETS FOR ACTUAL SIGN SIZES, POST DIAMETERS AND LOCATIONS.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS OR METERS. WHOLE NUMBERS INDICATE MILLIMETERS, DECIMAL NUMBERS INDICATE METERS UNLESS OTHERWISE NOTED.

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF HIGHWAY DESIGN

ALUMINUM POST MOUNTS (DIRECT BURIED)

REVISION DATE	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
10-15-97	PS-3D	M-DETAIL	CM-5379(017)	12250	137	282

PROCEDURE FOR SELECTING BEAM SECTIONS

- DETERMINE VALUES FOR W, H, & L AS INDICATED IN DRAWING
  W = MAXIMUM WIDTH OF REQUIRED SIGN
  H = MAXIMUM HEIGHT OF REQUIRED SIGN
  L = MAXIMUM DISTANCE BETWEEN TOP OF FOOTING AND BOTTOM OF REQUIRED SIGN
  (SEE GENERAL NOTE NO. 6)

- FOR SIGN SIZES BETWEEN THOSE VALUES IN THE TABLE, USE NEXT HIGHEST METER VALUE.

- ENTER TABLE WITH MAXIMUM VALUE OF "L" AND REQUIRED VALUES OF "W" AND "H" FOR SELECTION OF APPROPRIATE BEAM SELECTION.

2 POST SIGN

W(m)	L(m)	H(m) 1.2	1.5	1.8	2.1	2.4	2.7	3.0	3.4	3.6	4.0	4.3	4.6
1.8	2.4	S100x11	S100x11	S100x11	S100x11	W150x14	W150x14	W150x14	W150x18	W150x18	W150x18	W150x22	W150x22
	3.0	S100x11	S100x11	S100x11	W150x14	W150x14	W150x14	W150x18	W150x18	W150x22	W150x22	W150x22	W150x22
	3.6	S100x11	S100x11	W150x14	W150x14	W150x14	W150x18	W150x18	W150x22	W150x22	W150x22	W200x27	W200x27
2.4	2.4	S100x11	S100x11	W150x14	W150x14	W150x14	W150x18	W150x18	W150x22	W150x22	W150x22	W200x27	W200x27
	3.0	S100x11	W150x14	W150x14	W150x14	W150x18	W150x18	W150x22	W150x22	W150x22	W200x27	W200x27	W200x27
	3.6	S100x11	W150x14	W150x14	W150x18	W150x18	W150x22	W150x22	W150x22	W200x27	W200x27	W200x27	W200x27
3.0	2.4	S100x11	W150x14	W150x14	W150x18	W150x18	W150x22	W150x22	W150x22	W200x27	W200x27	W200x27	W200x27
	3.0	W150x14	W150x14	W150x18	W150x18	W150x22	W150x22	W150x22	W200x27	W200x27	W200x27	W200x27	W200x27
	3.6	W150x14	W150x14	W150x18	W150x18	W150x22	W150x22	W200x27	W200x27	W200x27	W200x27	W200x27	W200x27
	4.3	W150x14	W150x18	W150x18	W150x22	W150x22	W200x27	W200x27	W200x27	W200x27	W200x27	W200x27	W200x31
	4.9	W150x14	W150x18	W150x22	W150x22	W200x27	W200x27	W200x27	W200x27	W200x27	W200x31	W200x31	W200x31
3.6	2.4	W150x14	W150x14	W150x18	W150x18	W150x22	W150x22	W200x27	W200x27	W200x27	W200x27	W200x27	W200x27
	3.0	W150x14	W150x14	W150x18	W150x22	W150x22	W200x27	W200x27	W200x27	W200x27	W200x27	W200x27	W200x31
	3.6	W150x14	W150x18	W150x22	W150x22	W200x27	W200x27	W200x27	W200x27	W200x27	W200x27	W200x31	W200x31
	4.3	W150x18	W150x18	W150x22	W150x22	W200x27	W200x27	W200x27	W200x27	W200x27	W200x31	W200x31	W250x33
	4.9	W150x18	W150x22	W150x22	W200x27	W200x27	W200x27	W200x27	W200x27	W200x27	W200x31	W200x31	W250x33
4.3	2.4	W150x18	W150x18	W150x22	W200x27	W200x27	W200x27	W200x27	W200x27	W200x27	W200x27	W200x31	W200x31	W250x33
	3.0	W150x18	W150x22	W150x22	W200x27	W200x27	W200x27	W200x27	W200x27	W200x27	W200x31	W200x31	W250x33	W250x33
	3.6	W150x22	W150x22	W200x27	W200x27	W200x27	W200x27	W200x27	W200x27	W200x31	W200x31	W250x33	W250x33	W250x39
	4.3	W150x22	W200x27	W200x27	W200x27	W200x27	W200x27	W200x31	W200x31	W250x33	W250x33	W250x33	W250x39	W250x39
	4.9	W150x22	W200x27	W200x27	W200x27	W200x27	W200x31	W200x31	W250x33	W250x33	W250x33	W250x39	W250x39	W250x39
4.9	2.4	W150x18	W150x22	W150x22	W200x27	W200x27	W200x27	W200x27	W200x27	W200x27	W200x31	W200x31	W250x33	W250x33
	3.0	W150x22	W150x22	W200x27	W200x27	W200x27	W200x27	W200x27	W200x31	W250x33	W250x33	W250x33	W250x33	W250x39
	3.6	W150x22	W200x27	W200x27	W200x27	W200x27	W200x27	W200x31	W250x33	W250x33	W250x33	W250x33	W250x39	W250x39
	4.3	W150x22	W200x27	W200x27	W200x27	W200x27	W200x31	W250x33	W250x33	W250x33	W250x39	W250x39	W250x39	W310x39
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	5.5	W200x27	W200x27	W200x27	W200x31	W200x31	W250x33	W250x33	W250x39	W250x39	W310x39	W310x39	W310x39	W310x39
5.5	2.4	W150x18	W150x22	W200x27	W200x27	W200x27	W200x27	W200x27	W200x31	W250x33	W250x33	W250x33	W250x39	W250x39
	3.0	W150x22	W150x22	W200x27	W200x27	W200x27	W200x27	W200x31	W250x33	W250x33	W250x33	W250x39	W250x39	W250x39
	3.6	W150x22	W200x27	W200x27	W200x27	W200x27	W200x31	W250x33	W250x33	W250x33	W250x39	W250x39	W250x39	W310x39
	4.3	W200x27	W200x27	W200x27	W200x27	W200x31	W250x33	W250x33	W250x33	W250x39	W250x39	W310x39	W310x39	W310x39
	4.9	W200x27	W200x27	W200x27	W200x31	W200x31	W250x33	W250x33	W250x39	W250x39	W310x39	W310x39	W310x39	W310x39
	5.5	W200x27	W200x27	W200x27	W200x31	W250x33	W250x33	W250x39	W250x39	W310x39	W310x39	W310x39	--	
6.1	2.4	W150x22	W150x22	W200x27	W200x27	W200x27	W200x27	W200x31	W250x33	W250x33	W250x33	W250x39	W250x39	
	3.0	W150x22	W200x27	W200x27	W200x27	W200x27	W200x31	W250x33	W250x33	W250x39	W250x39	W250x39	W310x39	
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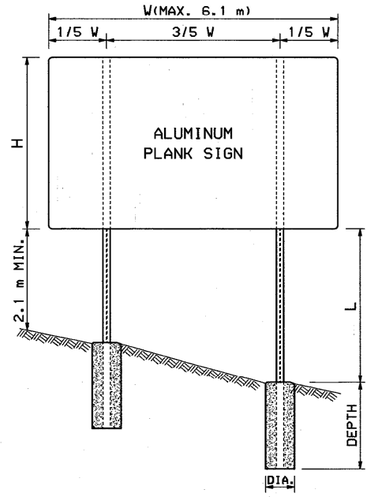
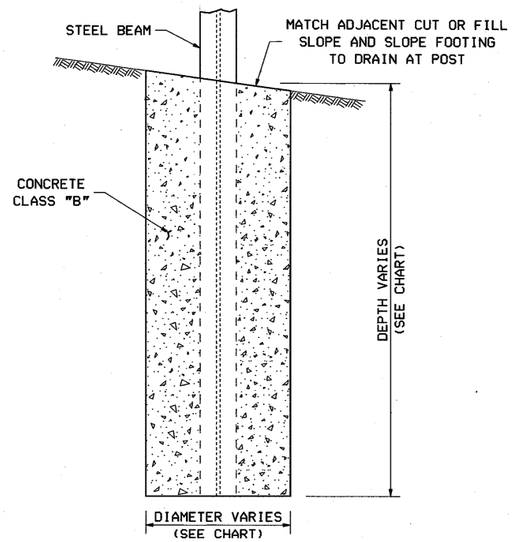
	4.3	W200x27	W200x27	W200x27	W200x31	W200x31	W250x33	W250x39	W250x39	W250x39	W310x39	W310x39	W310x39	--
	4.9	W200x27	W200x27	W200x27	W200x31	W250x33	W250x33	W250x39	W250x39	W310x39	W310x39	W310x39	--	--
	5.5	W200x27	W200x27	W200x31	W250x33	W250x33	W250x39	W250x39	W310x39	W310x39	W310x39	--	--	--
	6.1	W200x27	W200x27	W200x31	W250x33	W250x39	W250x39	W310x39	W310x39	W310x39	--	--	--	



POST SPACING DETAILS



FOOTING DETAILS

GENERAL NOTES

1. SIGNS SHALL BE PROVIDED FOR LOCATIONS SPECIFIED ON THE PLANS OR AS DIRECTED BY THE ENGINEER. SEE SIGN TEXT LAYOUT SHEETS FOR SIGN SIZES AND APPROXIMATE LOCATIONS.
2. DIMENSIONS, ELEVATIONS, SLOPES, AND SITUATIONS SHOWN ARE FOR ILLUSTRATIVE PURPOSES ONLY. ACTUAL CASES WILL DEPEND ON FIELD CONDITIONS.
3. WHEN TWO INDEPENDENT SIGNS ARE MOUNTED AS A SINGLE INSTALLATION, THE POST SUPPORTS SHALL BE CALCULATED WITH THE TOTAL AREA OF THE TWO SIGNS BEING CONSIDERED AS ONE UNIT, INCLUDING AN ALLOWANCE FOR A 150 mm VERTICAL SPACE BETWEEN THE TWO SIGNS.
4. STEEL FOR POSTS WEIGHING 22 Kg/m OR LESS SHALL CONFORM TO A.S.T.M. A36.
5. STEEL FOR POSTS WEIGHING 27 Kg/m OR MORE SHALL CONFORM TO A.S.T.M. A441.
6. POST LENGTH TO BE DETERMINED BY SIGN SIZE AND LOCATION, AND EXACT FIELD LOCATION TO BE DETERMINED BY THE ENGINEER.
7. TOP ELEVATIONS OF STEEL POSTS SHALL BE THE SAME FOR EACH SIGN AND FLUSH WITH SIGN TOP.
8. DEPTH OF LEDGE SHALL BE DETERMINED BY THE ENGINEER.
9. SEE STANDARD NO. PS-1 FOR ADDITIONAL INFORMATION.

POST	FOOTING	
SIZE	DEPTH	DIAMETER
S100x11	1.8 m	600 mm
W150x14	1.8 m	600 mm
W150x18	1.8 m	600 mm
W150x22	2.3 m	600 mm
W200x27	2.3 m	750 mm
W200x31	2.6 m	750 mm
W250x33	2.6 m	900 mm
W250x39	2.6 m	900 mm
W310x39	2.6 m	900 mm

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS OR METERS.
WHOLE NUMBERS INDICATE MILLIMETERS, DECIMAL NUMBERS INDICATE METERS UNLESS OTHERWISE NOTED.

STATE OF NEW HAMPSHIRE 1 OF 2

DEPARTMENT OF TRANSPORTATION ◦ BUREAU OF HIGHWAY DESIGN

STEEL BEAM MOUNTS (NON-BREAKAWAY)

REVISION DATE	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
10-1-97	PS-4D	M-DETAIL	CM-5379(017)	12250	138	282

PROCEDURE FOR SELECTING BEAM SECTIONS

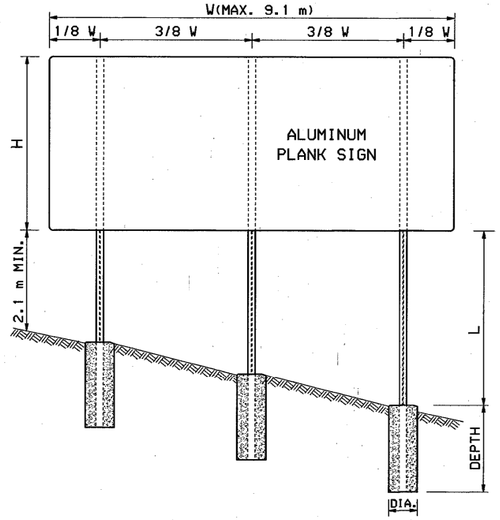
- DETERMINE VALUES FOR W, H, & L AS INDICATED IN DRAWING
  W = MAXIMUM WIDTH OF REQUIRED SIGN
  H = MAXIMUM HEIGHT OF REQUIRED SIGN
  L = MAXIMUM DISTANCE BETWEEN TOP OF FOOTING AND BOTTOM OF REQUIRED SIGN
  (SEE GENERAL NOTE NO. 6)

- FOR SIGN SIZES BETWEEN THOSE VALUES IN THE TABLE, USE NEXT HIGHEST METER VALUE.

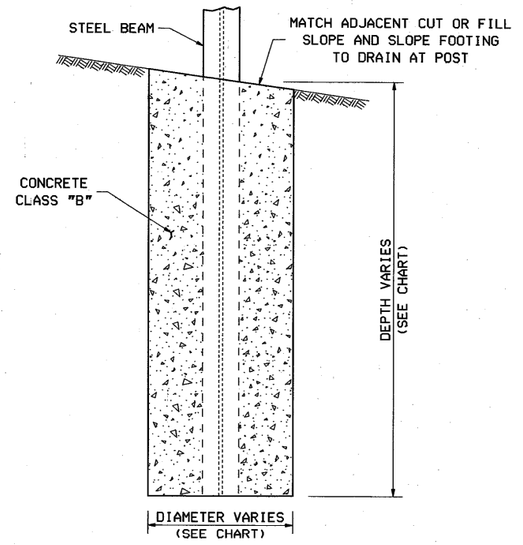
- ENTER TABLE WITH MAXIMUM VALUE OF "L" AND REQUIRED VALUES OF "W" AND "H" FOR SELECTION OF APPROPRIATE BEAM SELECTION.

3 POST SIGN

W(m)	L(m)	H(m)											
		1.2	1.5	1.8	2.1	2.4	2.7	3.0	3.4	3.6	4.0	4.3	4.6
6.7	2.4	W150x18	W150x18	W150x22	W150x22	W200x27	W200x27	W200x27	W200x27	W200x27	W200x31	W200x31	W250x33
	3.0	W150x18	W150x22	W150x22	W200x27	W200x27	W200x27	W200x27	W200x27	W200x31	W250x33	W250x33	W250x33
	3.6	W150x18	W150x22	W200x27	W200x27	W200x27	W200x27	W200x27	W200x31	W250x33	W250x33	W250x33	W250x39
	4.3	W150x22	W200x27	W200x27	W200x27	W200x27	W200x27	W200x31	W250x33	W250x33	W250x33	W250x39	W250x39
	4.9	W150x22	W200x27	W200x27	W200x27	W200x27	W200x31	W250x33	W250x33	W250x33	W250x39	W250x39	W310x39
	5.5	W150x22	W200x27	W200x27	W200x27	W200x31	W200x31	W250x33	W250x33	W250x39	W250x39	W310x39	W310x39
	6.1	W200x27	W200x27	W200x27	W200x27	W200x31	W250x33	W250x33	W250x39	W250x39	W310x39	W310x39	W310x39
	6.7	W200x27	W200x27	W200x27	W200x31	W200x31	W250x33	W250x33	W250x39	W250x39	W310x39	W310x39	W310x39
7.3	2.4	W150x18	W150x18	W150x22	W200x27	W200x27	W200x27	W200x27	W200x27	W200x31	W200x31	W250x33	W250x33
	3.0	W150x18	W150x22	W200x27	W200x27	W200x27	W200x27	W200x27	W200x31	W250x33	W250x33	W250x33	W250x39
	3.6	W150x22	W150x22	W200x27	W200x27	W200x27	W200x27	W200x31	W250x33	W250x33	W250x33	W250x39	W250x39
	4.3	W150x22	W200x27	W200x27	W200x27	W200x27	W200x31	W200x31	W250x33	W250x33	W250x39	W250x39	W310x39
	4.9	W150x22	W200x27	W200x27	W200x27	W200x31	W200x31	W250x33	W250x33	W250x33	W250x39	W310x39	W310x39
	5.5	W200x27	W200x27	W200x27	W200x27	W200x31	W250x33	W250x33	W250x39	W250x39	W310x39	W310x39	W310x39
	6.1	W200x27	W200x27	W200x27	W200x31	W200x31	W250x33	W250x39	W250x39	W310x39	W310x39	W310x39	--
	6.7	W200x27	W200x27	W200x27	W200x31	W250x33	W250x33	W250x39	W310x39	W310x39	W310x39	W310x39	--
7.9	2.4	W150x18	W150x22	W150x22	W200x27	W200x27	W200x27	W200x27	W200x31	W200x31	W250x33	W250x33	W250x39
	3.0	W150x18	W150x22	W200x27	W200x27	W200x27	W200x27	W200x31	W200x31	W250x33	W250x33	W250x39	W250x39
	3.6	W150x22	W200x27	W200x27	W200x27	W200x27	W200x31	W200x31	W250x33	W250x33	W250x39	W250x39	W310x39
	4.3	W150x22	W200x27	W200x27	W200x27	W200x27	W200x31	W250x33	W250x33	W250x39	W250x39	W310x39	W310x39
	4.9	W200x27	W200x27	W200x27	W200x27	W200x31	W250x33	W250x33	W250x39	W250x39	W310x39	W310x39	W310x39
	5.5	W200x27	W200x27	W200x27	W200x31	W200x31	W250x33	W250x39	W250x39	W310x39	W310x39	W310x39	--
	6.1	W200x27	W200x27	W200x27	W200x31	W250x33	W250x33	W250x39	W250x39	W310x39	W310x39	--	--
	6.7	W200x27	W200x27	W200x31	W250x33	W250x33	W250x39	W250x39	W310x39	W310x39	W310x39	--	--
	7.3	W200x27	W200x27	W200x31	W250x33	W250x33	W250x39	W310x39	W310x39	W310x39	--	--	--
8.5	2.4	W150x18	W150x22	W200x27	W200x27	W200x27	W200x27	W200x27	W200x31	W250x33	W250x33	W250x33	W250x39
	3.0	W150x22	W150x22	W200x27	W200x27	W200x27	W200x27	W200x31	W250x33	W250x33	W250x39	W250x39	W310x39
	3.6	W150x22	W200x27	W200x27	W200x27	W200x27	W200x31	W250x33	W250x33	W250x39	W250x39	W310x39	W310x39
	4.3	W150x22	W200x27	W200x27	W200x27	W200x31	W250x33	W250x33	W250x39	W250x39	W310x39	W310x39	W310x39
	4.9	W200x27	W200x27	W200x27	W200x31	W200x31	W250x33	W250x33	W250x39	W310x39	W310x39	W310x39	--
	5.5	W200x27	W200x27	W200x27	W200x31	W250x33	W250x33	W250x39	W250x39	W310x39	W310x39	--	--
	6.1	W200x27	W200x27	W200x31	W200x31	W250x33	W250x39	W250x39	W310x39	W310x39	--	--	--
	6.7	W200x27	W200x27	W200x31	W250x33	W250x33	W250x39	W310x39	W310x39	W310x39	--	--	--
	7.3	W200x27	W200x27	W200x31	W250x33	W250x39	W250x39	W310x39	W310x39	--	--	--	--
9.1	2.4	W150x18	W150x22	W200x27	W200x27	W200x27	W200x27	W200x31	W200x31	W250x33	W250x33	W250x39	W250x39
	3.0	W150x22	W200x27	W200x27	W200x27	W200x27	W200x31	W200x31	W250x33	W250x33	W250x39	W250x39	W310x39
	3.6	W150x22	W200x27	W200x27	W200x27	W200x31	W200x31	W250x33	W250x33	W250x39	W250x39	W310x39	W310x39
	4.3	W200x27	W200x27	W200x27	W200x27	W200x31	W250x33	W250x33	W250x39	W250x39	W310x39	W310x39	--
	4.9	W200x27	W200x27	W200x27	W200x31	W250x33	W250x33	W250x39	W250x39	W310x39	W310x39	--	--
	5.5	W200x27	W200x27	W200x31	W200x31	W250x33	W250x39	W250x39	W310x39	W310x39	W310x39	--	--
	6.1	W200x27	W200x27	W200x31	W250x33	W250x33	W250x39	W310x39	W310x39	W310x39	--	--	--
	6.7	W200x27	W200x27	W200x31	W250x33	W250x39	W250x39	W310x39	W310x39	--	--	--	--
	7.3	W200x27	W200x31	W250x33	W250x33	W250x39	W310x39	W310x39	--	--	--	--	--



POST SPACING DETAILS



FOOTING DETAILS

GENERAL NOTES

1. SIGNS SHALL BE PROVIDED FOR LOCATIONS SPECIFIED ON THE PLANS OR AS DIRECTED BY THE ENGINEER. SEE SIGN TEXT LAYOUT SHEETS FOR SIGN SIZES AND APPROXIMATE LOCATIONS.
2. DIMENSIONS, ELEVATIONS, SLOPES, AND SITUATIONS SHOWN ARE FOR ILLUSTRATIVE PURPOSES ONLY. ACTUAL CASES WILL DEPEND ON FIELD CONDITIONS.
3. WHEN TWO INDEPENDENT SIGNS ARE MOUNTED AS A SINGLE INSTALLATION, THE POST SUPPORTS SHALL BE CALCULATED WITH THE TOTAL AREA OF THE TWO SIGNS BEING CONSIDERED AS ONE UNIT, INCLUDING AN ALLOWANCE FOR A 150 mm VERTICAL SPACE BETWEEN THE TWO SIGNS.
4. STEEL FOR POSTS WEIGHING 22 Kg/m OR LESS SHALL CONFORM TO A.S.T.M. A36.
5. STEEL FOR POSTS WEIGHING 27 Kg/m OR MORE SHALL CONFORM TO A.S.T.M. A441.
6. POST LENGTH TO BE DETERMINED BY SIGN SIZE AND LOCATION, AND EXACT FIELD LOCATION TO BE DETERMINED BY THE ENGINEER.
7. TOP ELEVATIONS OF STEEL POSTS SHALL BE THE SAME FOR EACH SIGN AND FLUSH WITH SIGN TOP.
8. DEPTH OF LEDGE SHALL BE DETERMINED BY THE ENGINEER.
9. SEE STANDARD NO. PS-1 FOR ADDITIONAL INFORMATION.

POST	FOOTING	
SIZE	DEPTH	DIAMETER
S100x11	1.8 m	600 mm
W150x14	1.8 m	600 mm
W150x18	1.8 m	600 mm
W150x22	2.3 m	600 mm
W200x27	2.3 m	750 mm
W200x31	2.6 m	750 mm
W250x33	2.6 m	900 mm
W250x39	2.6 m	900 mm
W310x39	2.6 m	900 mm

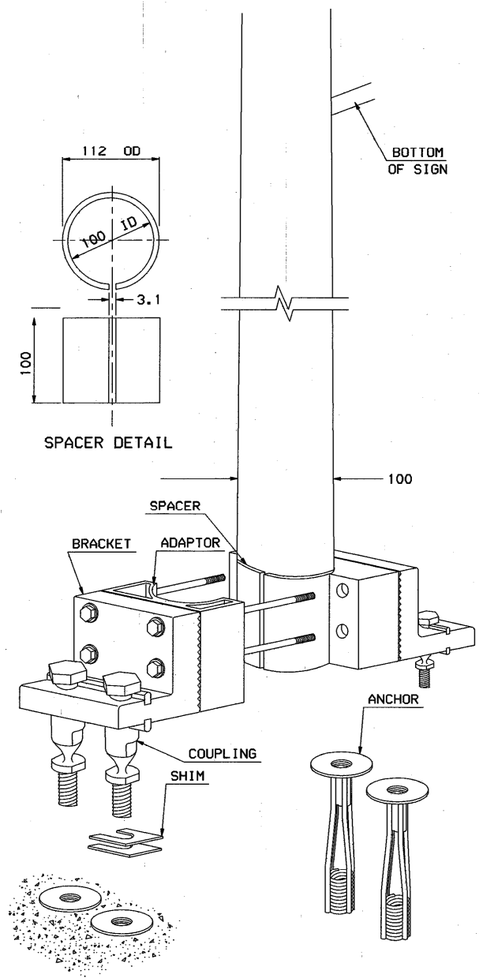
ALL DIMENSIONS SHOWN ARE IN MILLIMETERS OR METERS.
WHOLE NUMBERS INDICATE MILLIMETERS, DECIMAL NUMBERS INDICATE METERS UNLESS OTHERWISE NOTED.

STATE OF NEW HAMPSHIRE 2 OF 2

DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF HIGHWAY DESIGN

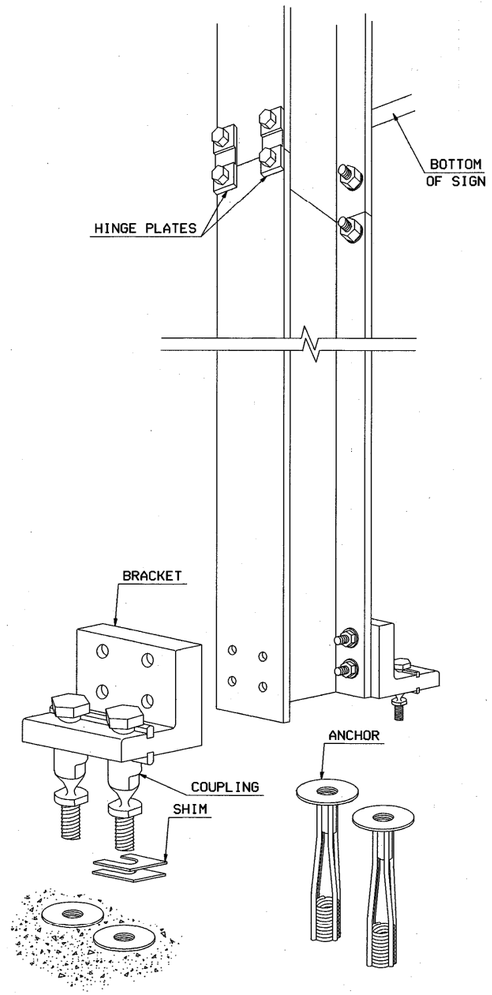
STEEL BEAM MOUNTS (NON-BREAKAWAY)

REVISION DATE	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
10-1-97	PS-4AD	M-DETAIL	CM-5379(017)	12250	139	282



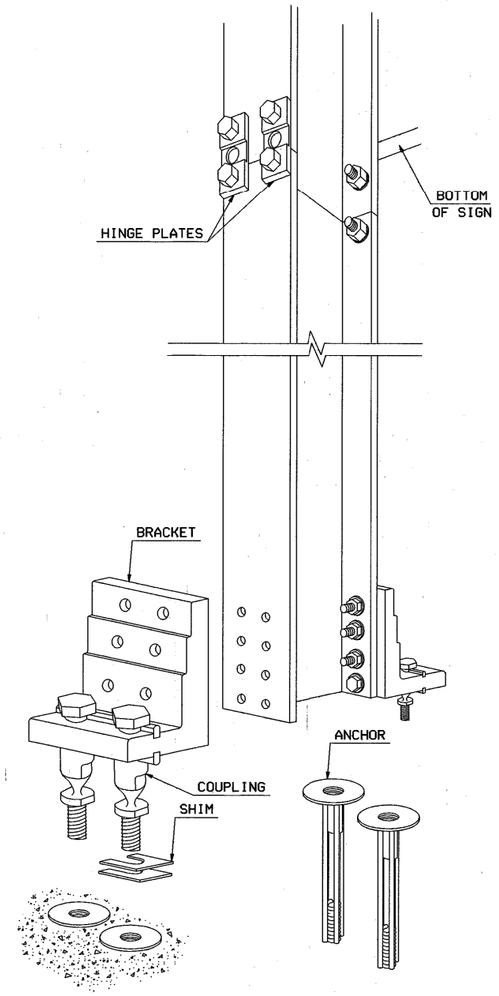
TRANSPO TYPE APx4.5 (S/B) (OR EQUAL)

USE FOR 100 mm DIAMETER ALUMINUM TUBE



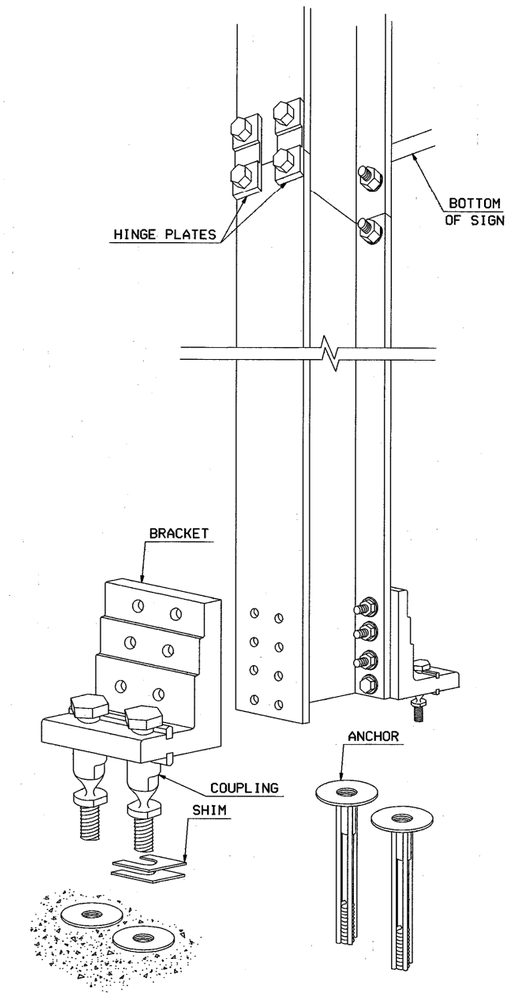
TRANSPO TYPE AI6-LP (OR EQUAL)

USE FOR W150x14 STEEL BEAM



TRANSPO TYPE B-525-LP (OR EQUAL)

USE FOR W150x18, W150x22, W200x27, OR W200x31 STEEL BEAMS



TRANSPO TYPE B-650-LP (OR EQUAL)

USE FOR W250x33, W250x39, W310x39, OR W360x45 STEEL BEAMS

GENERAL NOTES

1. ASSEMBLE ACCORDING TO MANUFACTURER'S INSTRUCTIONS
2. SEE SHEET 2 OF 5 OR 3 OF 5 FOR STEEL BEAM SIZES.
3. SEE SHEET 4 OF 5 FOR BRACKET SELECTION TABLES FOR TYPE B-525-LP & B-650-LP

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS OR METERS.
WHOLE NUMBERS INDICATE MILLIMETERS, DECIMAL NUMBERS INDICATE METERS UNLESS OTHERWISE NOTED.

STATE OF NEW HAMPSHIRE 1 OF 5

DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF HIGHWAY DESIGN

BREAKAWAY MOUNTS

REVISION DATE	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
10-1-97	PS-5D	M-DETAIL	CM-5379(017)	12250	140	282

PROCEDURE FOR SELECTING BEAM SECTIONS

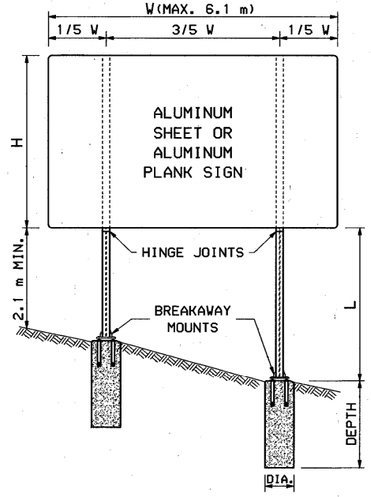
- DETERMINE VALUES OF W, H, & L AS INDICATED IN DRAWING
  W = MAXIMUM WIDTH OF REQUIRED SIGN
  H = MAXIMUM HEIGHT OF REQUIRED SIGN
  L = MAXIMUM DISTANCE BETWEEN TOP OF FOOTING AND BOTTOM OF REQUIRED SIGN (SEE GENERAL NOTE NO. 6)

- FOR SIGN SIZES BETWEEN THOSE VALUES IN THE TABLE, USE NEXT HIGHEST METER VALUE.

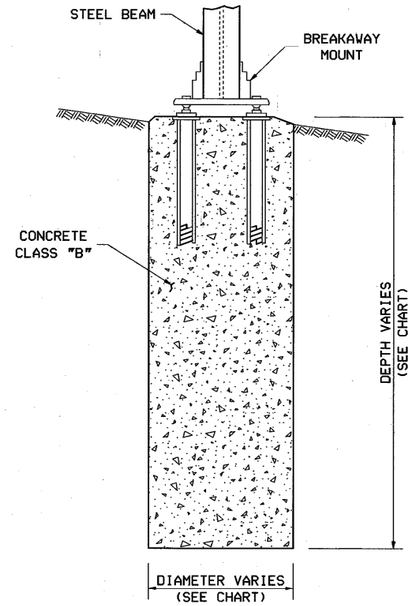
- ENTER TABLE WITH MAXIMUM VALUE OF "L" AND REQUIRED VALUES OF "W" AND "H" FOR SELECTION OF APPROPRIATE BEAM SECTION.

2 POST SIGN

W(m)	L(m)	H(m) 1.2	1.5	1.8	2.1	2.4	2.7	3.0	3.4	3.6	4.0	4.3	4.6
1.8	2.4	W150x14	W150x14	W150x14	W150x14	W150x14	W150x14	W150x14	W150x14	W150x18	W150x18	W200x27	W200x27
	3.0	W150x14	W150x14	W150x14	W150x14	W150x18	W150x18	W150x18	W150x22	W150x22	W200x27	W200x27	W200x27
	3.6	W150x14	W150x18	W150x18	W150x18	W150x22	W150x22	W150x22	W150x22	W200x27	W200x27	W200x27	W200x27
	4.3	W150x18	W150x18	W150x18	W150x22	W150x22	W150x22	W150x22	W200x27	W200x27	W200x27	W200x27	W200x31
	4.9	W150x18	W150x22	W150x22	W150x22	W150x22	W150x22	W200x27	W200x27	W200x27	W200x31	W200x31	W200x31
2.4	2.4	W150x14	W150x14	W150x14	W150x14	W150x14	W150x14	W150x18	W150x18	W150x18	W150x22	W200x27	W200x27
	3.0	W150x14	W150x14	W150x18	W150x18	W150x18	W150x18	W150x22	W200x27	W200x27	W200x27	W200x27	W200x27
	3.6	W150x18	W150x18	W150x22	W150x22	W150x22	W150x22	W200x27	W200x27	W200x27	W200x27	W200x27	W200x31
	4.3	W150x18	W150x22	W150x22	W150x22	W150x22	W200x27	W200x27	W200x27	W200x27	W200x31	W200x31	W200x31
	4.9	W150x22	W150x22	W150x22	W200x27	W200x27	W200x27	W200x31	W200x31	W200x31	W200x31	W250x39	W250x39
3.0	2.4	W150x14	W150x14	W150x14	W150x14	W150x18	W150x18	W150x18	W150x22	W200x27	W200x27	W200x27	W250x33
	3.0	W150x14	W150x18	W150x18	W150x18	W150x22	W150x22	W200x27	W200x27	W200x27	W200x27	W200x27	W250x33
	3.6	W150x18	W150x18	W150x22	W150x22	W200x27	W200x27	W200x27	W200x27	W200x27	W200x31	W200x31	W250x33
	4.3	W150x22	W150x22	W150x22	W200x27	W200x27	W200x27	W200x31	W200x31	W200x31	W200x31	W250x39	W250x39
	4.9	W150x22	W150x22	W200x27	W200x27	W200x31	W200x31	W200x31	W200x31	W250x39	W250x39	W250x39	W250x39
3.6	2.4	W150x14	W150x14	W150x14	W150x18	W150x18	W150x22	W200x27	W200x27	W200x27	W200x27	W250x33	W310x39
	3.0	W150x14	W150x18	W150x18	W150x22	W150x22	W200x27	W200x27	W200x27	W200x27	W250x33	W250x33	W310x39
	3.6	W150x18	W150x18	W150x22	W200x27	W200x27	W200x27	W200x27	W200x31	W200x31	W250x33	W250x33	W310x39
	4.3	W150x22	W150x22	W200x27	W200x27	W200x27	W200x31	W200x31	W250x33	W250x39	W250x39	W250x39	W310x39
	4.9	W150x22	W200x27	W200x27	W200x31	W200x31	W200x31	W250x39	W250x39	W250x39	W250x39	W310x39	W310x39
4.3	2.4	W150x14	W150x14	W150x18	W150x18	W150x22	W200x27	W200x27	W200x27	W200x27	W200x31	W310x39	W360x45
	3.0	W150x18	W150x18	W150x22	W150x22	W200x27	W200x27	W200x27	W200x27	W250x33	W310x39	W310x39	W360x45
	3.6	W150x18	W150x22	W200x27	W200x27	W200x27	W200x31	W200x31	W200x31	W250x33	W310x39	W310x39	W360x45
	4.3	W150x22	W150x22	W200x27	W200x27	W200x31	W200x31	W250x33	W250x39	W250x39	W310x39	W310x39	W360x45
	4.9	W150x22	W200x27	W200x27	W200x31	W200x31	W250x33	W250x39	W250x39	W310x39	W360x45	--	--
4.9	2.4	W150x14	W150x14	W150x18	W150x18	W200x27	W200x27	W200x27	W200x27	W200x27	W250x33	W360x45	--
	3.0	W150x18	W150x18	W150x22	W200x27	W200x27	W200x27	W200x27	W250x33	W250x39	W310x39	W360x45	--
	3.6	W150x22	W150x22	W200x27	W200x27	W200x31	W200x31	W200x31	W250x39	W250x39	W310x39	W360x45	--
	4.3	W150x22	W200x27	W200x27	W200x31	W200x31	W250x39	W250x39	W250x39	W250x39	W310x39	W360x45	--
	4.9	W200x27	W200x27	W200x27	W200x31	W200x31	W250x39	W250x39	W310x39	--	--	--	--
5.5	2.4	W150x14	W150x18	W150x18	W150x22	W200x27	W200x27	W200x27	W200x27	W250x33	W310x39	--	--
	3.0	W150x18	W150x22	W150x22	W200x27	W200x27	W200x27	W200x31	W250x33	W310x39	W360x45	--	--
	3.6	W150x22	W150x22	W200x27	W200x27	W200x31	W200x31	W250x39	W250x39	W310x39	W360x45	--	--
	4.3	W150x22	W200x27	W200x31	W200x31	W250x33	W250x39	W250x39	W250x39	W310x39	--	--	--
	4.9	W200x27	W200x31	W200x31	W250x39	W250x39	W250x39	W310x39	--	--	--	--	--
6.1	2.4	W150x14	W150x18	W150x22	W200x27	W200x27	W200x27	W200x27	W250x33	W250x39	W310x39	--	--
	3.0	W150x18	W150x22	W200x27	W200x27	W200x27	W200x27	W250x33	W310x39	W360x45	--	--	--
	3.6	W150x22	W150x22	W200x27	W200x31	W200x31	W250x33	W250x39	W310x39	W360x45	--	--	--
	4.3	W200x27	W200x27	W200x31	W200x31	W250x39	W250x39	W250x39	W310x39	--	--	--	--
	4.9	W200x27	W200x31	W250x39	W250x39	W250x39	W310x39	--	--	--	--	--	--



POST SPACING DETAILS



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4. STEEL FOR POSTS WEIGHING 22 kg/m OR LESS SHALL CONFORM TO A.S.T.M. A36.
5. STEEL FOR POSTS WEIGHING 27 kg/m OR MORE SHALL CONFORM TO A.S.T.M. A441.
6. POST LENGTH TO BE DETERMINED BY SIGN SIZE AND LOCATION, AND EXACT FIELD LOCATION TO BE DETERMINED BY THE ENGINEER.
7. TOP ELEVATIONS OF STEEL POSTS SHALL BE THE SAME FOR EACH SIGN AND FLUSH WITH SIGN TOP.
8. DEPTH OF LEDGE SHALL BE DETERMINED BY THE ENGINEER.
9. SEE STANDARD NO. PS-1 FOR ADDITIONAL INFORMATION.

POST	FOOTING	
SIZE	DEPTH	DIAMETER
W150x14	1.8 m	600 mm
W150x18	1.8 m	600 mm
W150x22	2.3 m	600 mm
W200x27	2.3 m	750 mm
W200x31	2.6 m	750 mm
W250x33	2.6 m	900 mm
W250x39	2.6 m	900 mm
W310x39	2.6 m	900 mm
W360x45	2.7 m	900 mm

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS OR METERS.
WHOLE NUMBERS INDICATE MILLIMETERS, DECIMAL NUMBERS INDICATE METERS UNLESS OTHERWISE NOTED.

STATE OF NEW HAMPSHIRE 2 OF 5

DEPARTMENT OF TRANSPORTATION ◦ BUREAU OF HIGHWAY DESIGN

BREAKAWAY MOUNTS (STEEL BEAM)

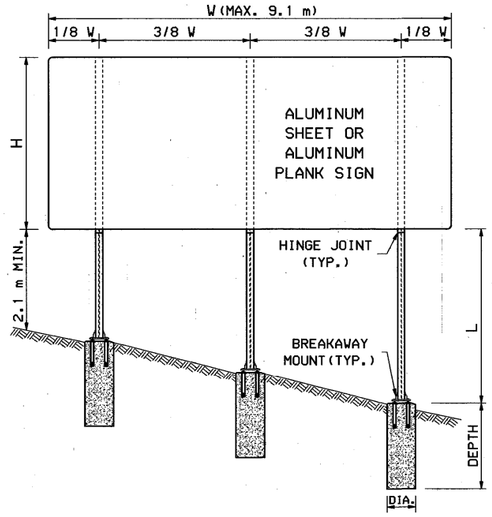
REVISION DATE	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
10-1-97	PS-5AD	M-DETAIL	CM-5379(017)	12250	141	282

PROCEDURE FOR SELECTING BEAM SECTIONS

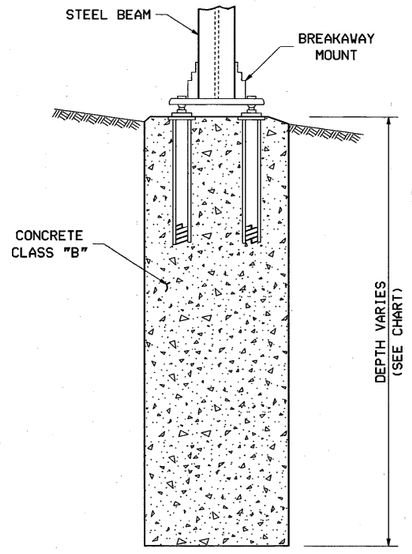
- DETERMINE VALUES OF W, H, & L AS INDICATED IN DRAWING
  - W = MAXIMUM WIDTH OF REQUIRED SIGN
  - H = MAXIMUM HEIGHT OF REQUIRED SIGN
  - L = MAXIMUM DISTANCE BETWEEN TOP OF FOOTING AND BOTTOM OF REQUIRED SIGN (SEE GENERAL NOTE NO. 6)
- FOR SIGN SIZES BETWEEN THOSE VALUES IN THE TABLE, USE NEXT HIGHEST FOOT VALUE.
- ENTER TABLE WITH MAXIMUM VALUE OF "L" AND REQUIRED VALUES OF "W" AND "H" FOR SELECTION OF APPROPRIATE BEAM SECTION.

3 POST SIGN

W(m)	L(m)	H(m)											
		1.2	1.5	1.8	2.1	2.4	2.7	3.0	3.4	3.6	4.0	4.3	4.6
6.7	2.4	W150x14	W150x14	W150x18	W150x18	W150x22	W200x27	W200x27	W200x27	W200x27	W250x33	W360x45	--
	3.0	W150x18	W150x18	W150x22	W150x22	W200x27	W200x27	W200x27	W200x31	W250x33	W310x39	W360x45	--
	3.6	W150x18	W150x22	W200x27	W200x27	W200x27	W200x31	W200x31	W200x31	W250x39	W310x39	W360x45	--
	4.3	W150x22	W200x27	W200x27	W200x31	W200x31	W200x31	W250x39	W250x39	W250x39	W310x39	W360x45	--
	4.9	W200x27	W200x27	W200x31	W200x31	W250x39	W250x39	W250x39	W310x39	W310x39	--	--	--
7.3	2.4	W150x14	W150x14	W150x18	W150x18	W200x27	W200x27	W200x27	W200x27	W200x31	W250x33	W360x45	--
	3.0	W150x18	W150x18	W150x22	W200x27	W200x27	W200x27	W200x27	W250x33	W250x39	W310x39	W360x45	--
	3.6	W150x22	W150x22	W200x27	W200x27	W200x31	W200x31	W200x31	W250x39	W250x39	W310x39	W360x45	--
	4.3	W150x22	W200x27	W200x27	W200x31	W200x31	W250x39	W250x39	W250x39	W250x39	W310x39	W360x45	--
	4.9	W200x27	W200x27	W200x31	W200x31	W250x39	W250x39	W250x39	W310x39	--	--	--	--
7.9	2.4	W150x14	W150x18	W150x18	W150x18	W200x27	W200x27	W200x27	W200x27	W250x33	W310x39	--	--
	3.0	W150x18	W150x22	W150x22	W200x27	W200x27	W200x27	W200x31	W250x33	W310x39	W360x45	--	--
	3.6	W150x22	W150x22	W200x27	W200x27	W200x31	W200x31	W200x31	W250x39	W310x39	W360x45	--	--
	4.3	W150x22	W200x31	W200x31	W200x31	W200x31	W250x39	W250x39	W250x39	W310x39	W360x45	--	--
	4.9	W200x27	W200x31	W200x31	W250x39	W250x39	W250x39	W310x39	W360x45	--	--	--	--
8.5	2.4	W150x14	W150x18	W150x18	W200x27	W200x27	W200x27	W200x27	W200x27	W250x33	W310x39	--	--
	3.0	W150x18	W150x22	W200x27	W200x27	W200x27	W200x27	W250x33	W250x33	W310x39	W360x45	--	--
	3.6	W150x22	W150x22	W200x27	W200x27	W200x31	W200x31	W250x39	W250x39	W310x39	W360x45	--	--
	4.3	W200x27	W200x27	W200x31	W250x39	W250x39	W250x39	W250x39	W310x39	W310x39	--	--	--
	4.9	W200x27	W200x31	W200x31	W250x39	W250x39	W250x39	W310x39	--	--	--	--	--
9.1	2.4	W150x14	W150x18	W150x22	W200x27	W200x27	W200x27	W200x27	W250x33	W250x39	W310x39	--	--
	3.0	W150x18	W150x22	W200x27	W200x27	W200x27	W200x27	W250x33	W310x39	W360x45	--	--	--
	3.6	W150x22	W200x27	W200x27	W200x31	W200x31	W250x33	W250x39	W310x39	W360x45	--	--	--
	4.3	W200x27	W200x27	W200x31	W200x31	W250x39	W250x39	W250x39	W310x39	--	--	--	--
	4.9	W200x27	W200x31	W250x39	W250x39	W250x39	W310x39	--	--	--	--	--	--



POST SPACING DETAILS



FOOTING DETAILS

GENERAL NOTES

1. SIGNS SHALL BE PROVIDED FOR LOCATIONS SPECIFIED ON THE PLANS OR AS DIRECTED BY THE ENGINEER. SEE SIGN TEXT LAYOUT SHEETS FOR SIGN SIZES AND APPROXIMATE LOCATIONS.
2. DIMENSIONS, ELEVATIONS, SLOPES, AND SITUATIONS SHOWN ARE FOR ILLUSTRATIVE PURPOSES ONLY. ACTUAL CASES WILL DEPEND ON FIELD CONDITIONS.
3. WHEN TWO INDEPENDENT SIGNS ARE MOUNTED AS A SINGLE INSTALLATION, THE POST SUPPORTS SHALL BE CALCULATED WITH THE TOTAL AREA OF THE TWO SIGNS BEING CONSIDERED AS ONE UNIT, INCLUDING AN ALLOWANCE FOR 150 mm VERTICAL SPACE BETWEEN THE TWO SIGNS.
4. STEEL FOR POSTS WEIGHING 22 kg/m OR LESS SHALL CONFORM TO A.S.T.M. A36.
5. STEEL FOR POSTS WEIGHING 27 kg/m OR MORE SHALL CONFORM TO A.S.T.M. A441.
6. POST LENGTH TO BE DETERMINED BY SIGN SIZE AND LOCATION, AND EXACT FIELD LOCATION TO BE DETERMINED BY THE ENGINEER.
7. TOP ELEVATIONS OF STEEL POSTS SHALL BE THE SAME FOR EACH SIGN AND FLUSH WITH SIGN TOP.
8. DEPTH OF LEDGE SHALL BE DETERMINED BY THE ENGINEER.
9. SEE STANDARD NO. PS-1 FOR ADDITIONAL INFORMATION.

POST	FOOTING	
SIZE	DEPTH	DIAMETER
W150x14	1.8 m	600 mm
W150x18	1.8 m	600 mm
W150x22	2.3 m	600 mm
W200x27	2.3 m	750 mm
W200x31	2.6 m	750 mm
W250x33	2.6 m	900 mm
W250x39	2.6 m	900 mm
W310x39	2.6 m	900 mm
W360x45	2.7 m	900 mm

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS OR METERS.
WHOLE NUMBERS INDICATE MILLIMETERS, DECIMAL NUMBERS INDICATE METERS UNLESS OTHERWISE NOTED.

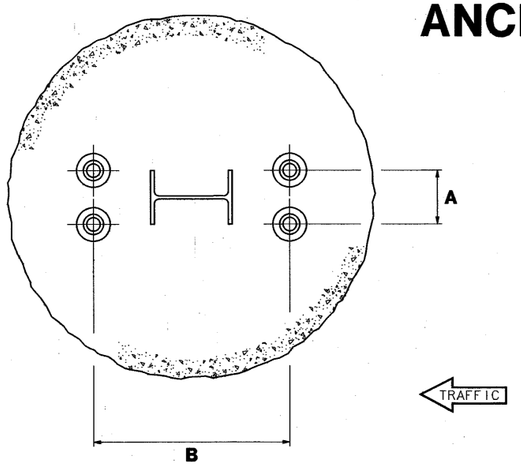
STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

BREAKAWAY MOUNTS (STEEL BEAM)

REVISION DATE	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
10-1-97	PS-5BD	M-DETAIL	CM-5379(017)	12250	142	232

ANCHOR INSTALLATION & BRACKET SELECTION



PLAN VIEW OF FOOTINGS

(SEE SHEETS 2 & 3 OF 5 FOR FOOTING SIZES)

A = LATERAL SPACING OF ANCHORS

75 mm FOR B-525 USED ON 150 mm & 200 mm WIDE FLANGE POSTS

100 mm FOR B-650 USED ON 250 mm , 300 mm, & 350 mm WIDE FLANGE POSTS

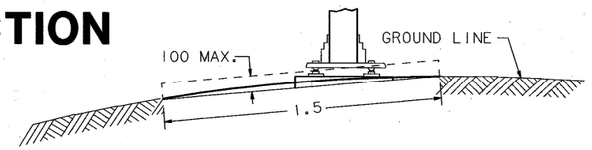
108 mm FOR AI6 USED NO W150x14 WIDE FLANGE POSTS

B = LONGITUDINAL SPACING OF ANCHORS

* BRACKET #1 - DEPTH OF POST SECTION PLUS 202 mm
* BRACKET #2 - DEPTH OF POST SECTION PLUS 205 mm
* BRACKET #3 - DEPTH OF POST SECTION PLUS 206 mm

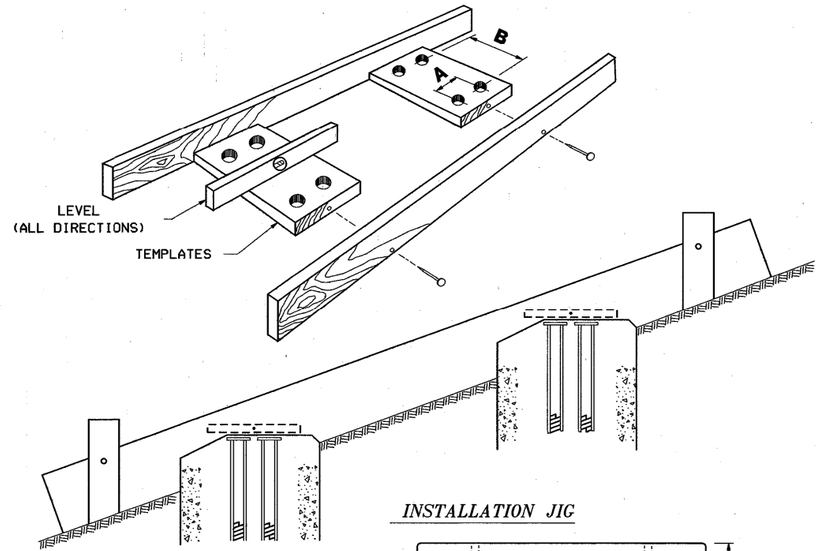
DEPTH OF POST SECTION PLUS 94 mm FOR AI6

* FOR B-525 & B-650 MOUNTS. SEE BRACKET TABLES

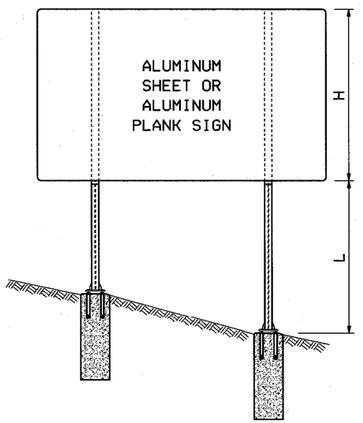


MAXIMUM BREAKAWAY STUB HEIGHT

BREAKAWAY SUPPORTS PLACED ON ROADSIDE SLOPES SHALL NOT ALLOW IMPACTING VEHICLES TO SNAG ON EITHER THE FOUNDATION OR ANY SUBSTANTIAL REMAINS OF THE SUPPORT. SURROUNDING TERRAIN SHALL BE GRADED TO PERMIT VEHICLES TO PASS OVER ANY NON-BREAKAWAY PORTION OF THE SIGN INSTALLATION WHICH REMAINS IN THE GROUND OR RIGIDLY ATTACHED TO THE FOUNDATION.



INSTALLATION JIG



150 mm POST

POST LENGTH = L+H

SIGN HEIGHT = H	3.0	3.3	3.6	3.9	4.3	4.6	4.9	5.2	5.5	5.8	6.1	6.4	6.7	7.0	7.3	7.6
0.9																
1.2																
1.5																
1.8														1		
2.1																
2.4																
2.7																
3.0																
3.3																
3.6																
3.9				3												
4.3																
4.6																

200 mm POST

POST LENGTH = L+H

SIGN HEIGHT = H	3.0	3.3	3.6	3.9	4.3	4.6	4.9	5.2	5.5	5.8	6.1	6.4	6.7	7.0	7.3	7.6
0.9																
1.2																
1.5																
1.8																
2.1																
2.4																
2.7																
3.0																
3.3																
3.6																
3.9				3												
4.3																
4.6																

BRACKET TABLES FOR B-525-LP MOUNTS

250 mm POST

POST LENGTH = L+H

SIGN HEIGHT = H	3.0	3.3	3.6	3.9	4.3	4.6	4.9	5.2	5.5	5.8	6.1	6.4	6.7	7.0	7.3	7.6
0.9																
1.2																
1.5																
1.8																
2.1																
2.4																
2.7																
3.0																
3.3																
3.6																
3.9				3												
4.3																
4.6																

300 mm POST

POST LENGTH = L+H

SIGN HEIGHT = H	3.0	3.3	3.6	3.9	4.3	4.6	4.9	5.2	5.5	5.8	6.1	6.4	6.7	7.0	7.3	7.6
0.9																
1.2																
1.5																
1.8																
2.1																
2.4																
2.7																
3.0																
3.3																
3.6																
3.9				3												
4.3																
4.6																

350 mm POST

POST LENGTH = L+H

SIGN HEIGHT = H	3.0	3.3	3.6	3.9	4.3	4.6	4.9	5.2	5.5	5.8	6.1	6.4	6.7	7.0	7.3	7.6
0.9																
1.2																
1.5																
1.8																
2.1																
2.4																
2.7																
3.0																
3.3																
3.6																
3.9				3												
4.3																
4.6																

BRACKET TABLES FOR B-650-LP MOUNTS

SELECT CORRECT BRACKET NUMBER BY LOCATING THE INTERSECTION OF SIGN HEIGHT AND POST LENGTH IN THE BRACKET SELECTION MATRIX. THE INTERSECTION WILL BE EITHER ZONE 1, 2, OR 3 WHICH CORRESPONDS TO BRACKET NUMBERS 1, 2, OR 3.

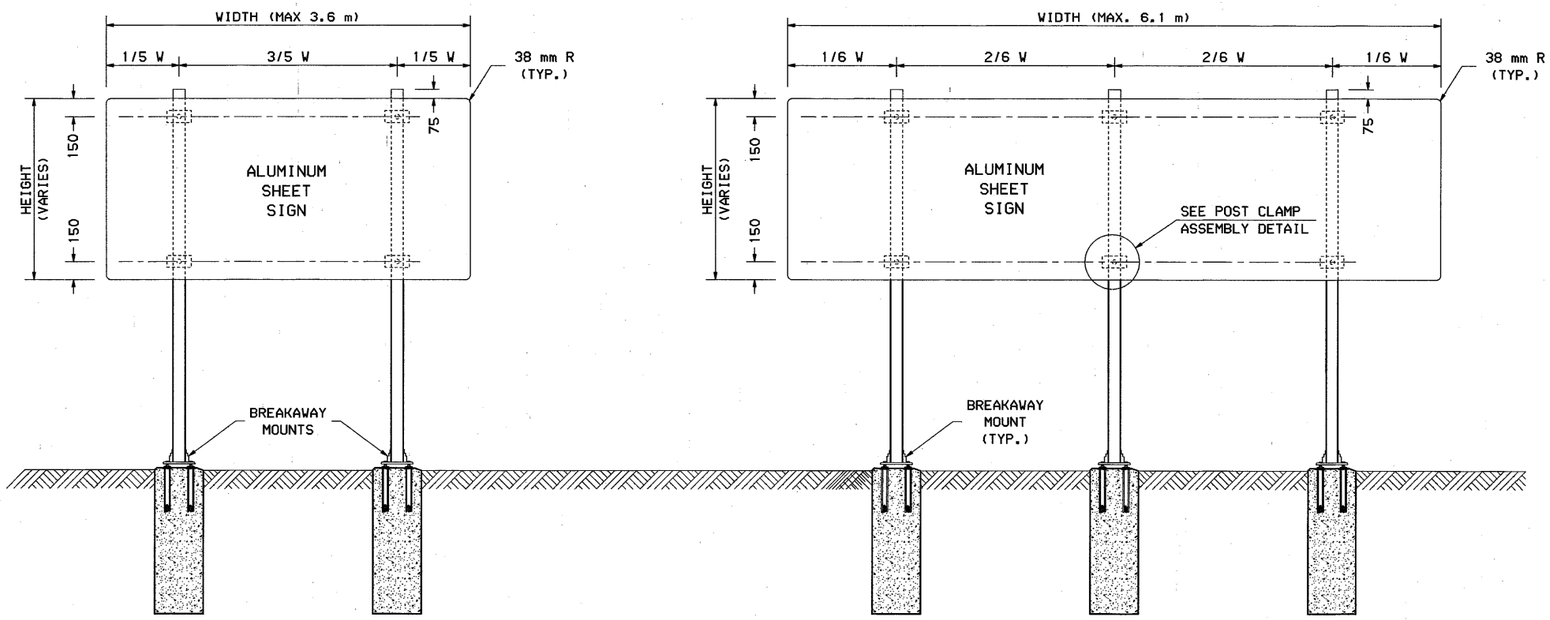
ALL DIMENSIONS SHOWN ARE IN MILLIMETERS OR METERS. WHOLE NUMBERS INDICATE MILLIMETERS, DECIMAL NUMBERS INDICATE METERS UNLESS OTHERWISE NOTED.

STATE OF NEW HAMPSHIRE 4 OF 5

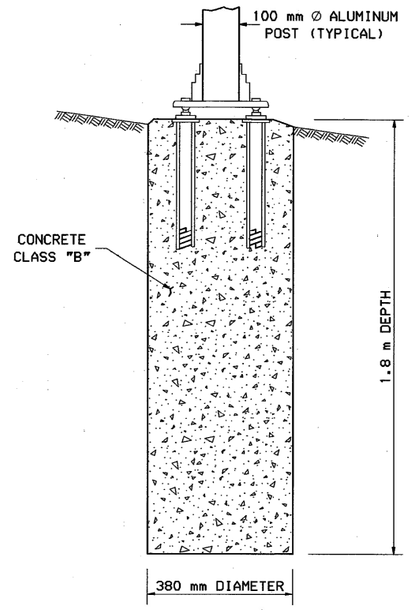
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

BREAKAWAY MOUNTS (STEEL BEAM)

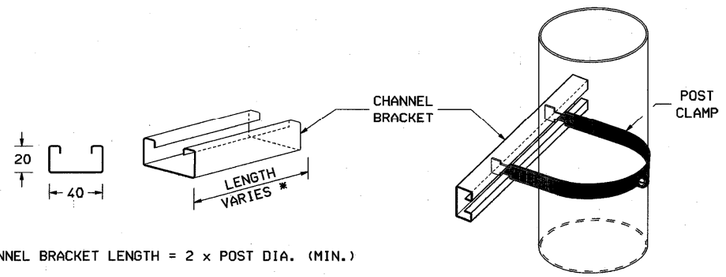
REVISION DATE	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
10-1-97	PS-5CD	M-DETAIL	CM-5379(017)	12250	143	282



ALUMINUM POST SPACING DETAILS



FOOTING DETAILS



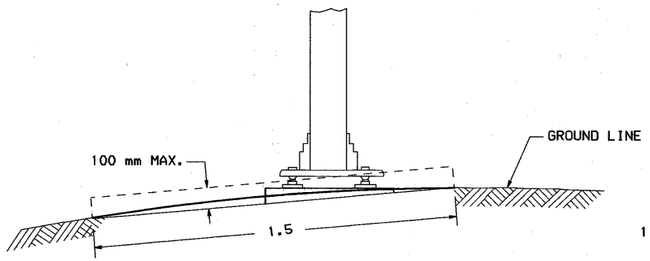
* CHANNEL BRACKET LENGTH = 2 x POST DIA. (MIN.)

P-4100	CHANNEL	1.9 mm
P-4100-T	CHANNEL	1.6 mm
P-4100-HS	CHANNEL	1.9 mm

P-1120-E POST CLAMP 101.6 mm DIA. 3.0 mm

POST CLAMP ASSEMBLIES

1. HARDWARE SHALL BE UNISTRUT OR EQUAL
2. FINISH SHALL BE ELECTRO-GALVANIZED
3. USE 8 mm STAINLESS STEEL CAP SCREW WITH 22 mm O.D. WASHER & LOCKNUT FOR BRACKET TO SIGN CONNECTION



MAXIMUM BREAKAWAY STUB HEIGHT

BREAKAWAY SUPPORTS PLACED ON ROADSIDE SLOPES SHALL NOT ALLOW IMPACTING VEHICLES TO SNAG ON EITHER THE FOUNDATION OR ANY SUBSTANTIAL REMAINS OF THE SUPPORT. SURROUNDING TERRAIN SHALL BE GRADED TO PERMIT VEHICLES TO PASS OVER ANY NON-BREAKAWAY PORTION OF THE SIGN INSTALLATION WHICH REMAINS IN THE GROUND OR RIGIDLY ATTACHED TO THE FOUNDATION.

GENERAL NOTES

1. ALL SIGNS TO BE FASTENED TO POSTS WITH POST CLAMP ASSEMBLIES AS PER DETAIL. WHEN SIGN EXCEEDS 1.2 m IN HEIGHT, USE 3 POST CLAMP ASSEMBLIES PER POST.
2. SEE SIGN TEXT LAYOUT SHEETS INCLUDED IN THE PLANS FOR ACTUAL SIGN SIZES AND LOCATIONS.
3. SIGN HEIGHT SHALL BE IN ACCORDANCE WITH *MUTCD* PART II.

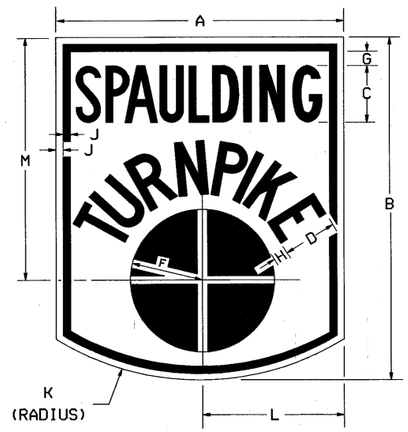
ALL DIMENSIONS SHOWN ARE IN MILLIMETERS OR METERS. WHOLE NUMBERS INDICATE MILLIMETERS, DECIMAL NUMBERS INDICATE METERS UNLESS OTHERWISE NOTED.

STATE OF NEW HAMPSHIRE 5 OF 5

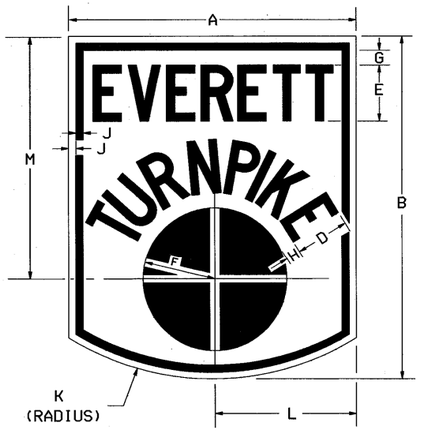
DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF HIGHWAY DESIGN

BREAKAWAY MOUNTS (ALUMINUM POST)

REVISION DATE	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
10-15-97	PS-5DD	M-DETAIL	CM-5379(017)	12250	144	282



M1-6a

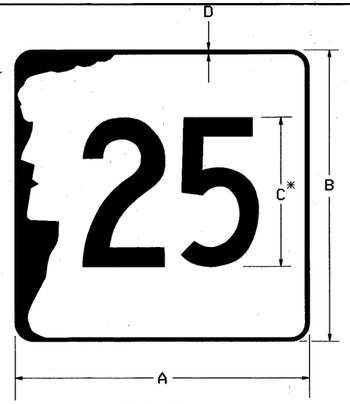


M1-6b

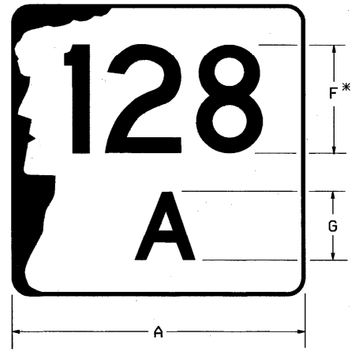
N.H. TURNPIKE ROUTE MARKERS

(FOR GUIDE SIGN USE)

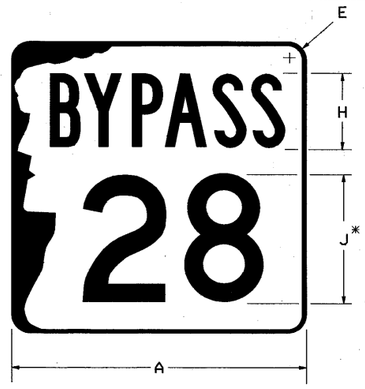
SIGN	DIMENSIONS (mm)											
	A	B	C	D	E	F	G	H	J	K	L	M
STANDARD	500	600	100B	100B	100C	125	25	25	12	425	250	425
OVERHEAD	750	900	150B	150B	150C	200	50	25	12	712	375	625



M1-5



M1-5a



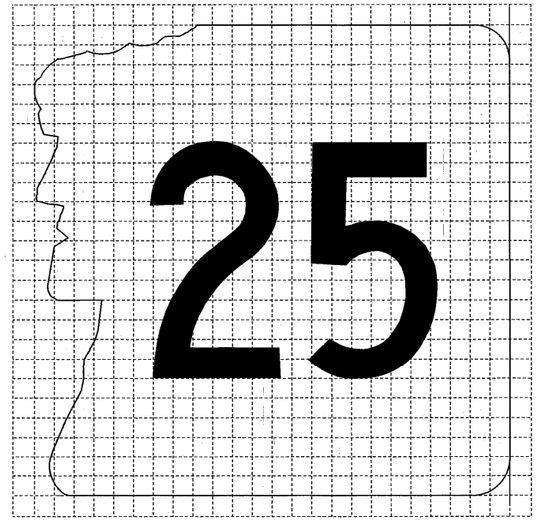
M1-5b

N.H. STATE ROUTE MARKER

(FOR INDEPENDENT USE)

SIGN	DIMENSIONS (mm)								
	A	B	C	D	E	F	G	H	J
1,2 DIGITS	600	600	300D	13	38	225D	150D	150B	225D
3 DIGITS	600	600	300B	13	38	225D	150D	150B	225D
1,2 DIGITS	750	750	375D	13	38	300D	200D	200B	300D
3 DIGITS	750	750	375B	13	38	300D	200D	200B	300D
1,2 DIGITS	900	900	450D	19	56	350D	225D	225B	350D
3 DIGITS	900	900	450B	19	56	350D	225D	225B	350D

* OPTICALLY SPACE NUMERALS WITHIN SHIELD



M1-5, N.H. STATE ROUTE MARKER PATTERN (CENTER LINE)

(FOR GUIDE SIGN USE)

NOTE: USE TABLE ABOVE RIGHT FOR NUMERAL AND LETTER SIZES.
USE THIS PATTERN FOR ALL N.H. STATE ROUTE MARKERS.

GENERAL NOTES

1. BACKGROUND FOR ALL SHIELDS SHALL BE SILVER TYPE III SHEETING.
2. SHEET ALUMINUM USED FOR DEMOUNTABLE ROUTE MARKERS SHALL CONFORM TO THE OUTLINE OF THE SHIELD. AS AN OPTION FOR N.H. STATE ROUTE MARKERS, THE CUT OUT "OLD MAN" OUTLINE MAY BE MOUNTED ON SQUARE SHEET ALUMINUM COVERED WITH SHEETING WHICH MATCHES THE BACKGROUND OF THE MAIN SIGN IN ACCORDANCE WITH 615.
3. NEW HAMPSHIRE STATE ROUTE MARKERS SHALL UTILIZE "THE OLD MAN" IMAGE OR OUTLINE AS FOLLOWS:
   - INDEPENDENT ROUTE MARKERS SHALL HAVE BLACK TEXT INSIDE A BLACK "OLD MAN" IMAGE AS SHOWN ABOVE,
   - GUIDE SIGN ROUTE MARKERS SHALL HAVE BLACK TEXT ON A CUT OUT SILVER "OLD MAN" OUTLINE AS SHOWN BELOW LEFT.
4. NEW HAMPSHIRE TURNPIKE ROUTE MARKERS SHALL UTILIZE THE FOLLOWING DESIGN:
   - SPAULDING TURNPIKE GUIDE SIGN ROUTE MARKERS SHALL HAVE BLUE TYPE III TEXT, BORDER, AND DISK ON A SILVER BACKGROUND,
   - EVERETT TURNPIKE GUIDE SIGN ROUTE MARKERS SHALL HAVE GREEN TYPE III TEXT, BORDER, AND DISK ON A SILVER BACKGROUND.
5. INTERSTATE AND U.S. ROUTE MARKERS SHALL CONFORM TO THE MUTCD AND STANDARD HIGHWAY SIGNS MANUAL.
6. DIMENSIONS OF ROUTE MARKERS NOT SHOWN ON THIS SHEET SHALL BE DIRECTLY PROPORTIONAL TO THOSE SHOWN.

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

ROUTE MARKER DETAILS

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS OR METERS.
WHOLE NUMBERS INDICATE MILLIMETERS, DECIMAL NUMBERS INDICATE METERS UNLESS OTHERWISE NOTED.

REVISION DATE	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
10-1-97	PS-6D	M-DETAIL	CM-5379(017)	12250	145	282

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	DESCRIPTION

NOTEBOOKS

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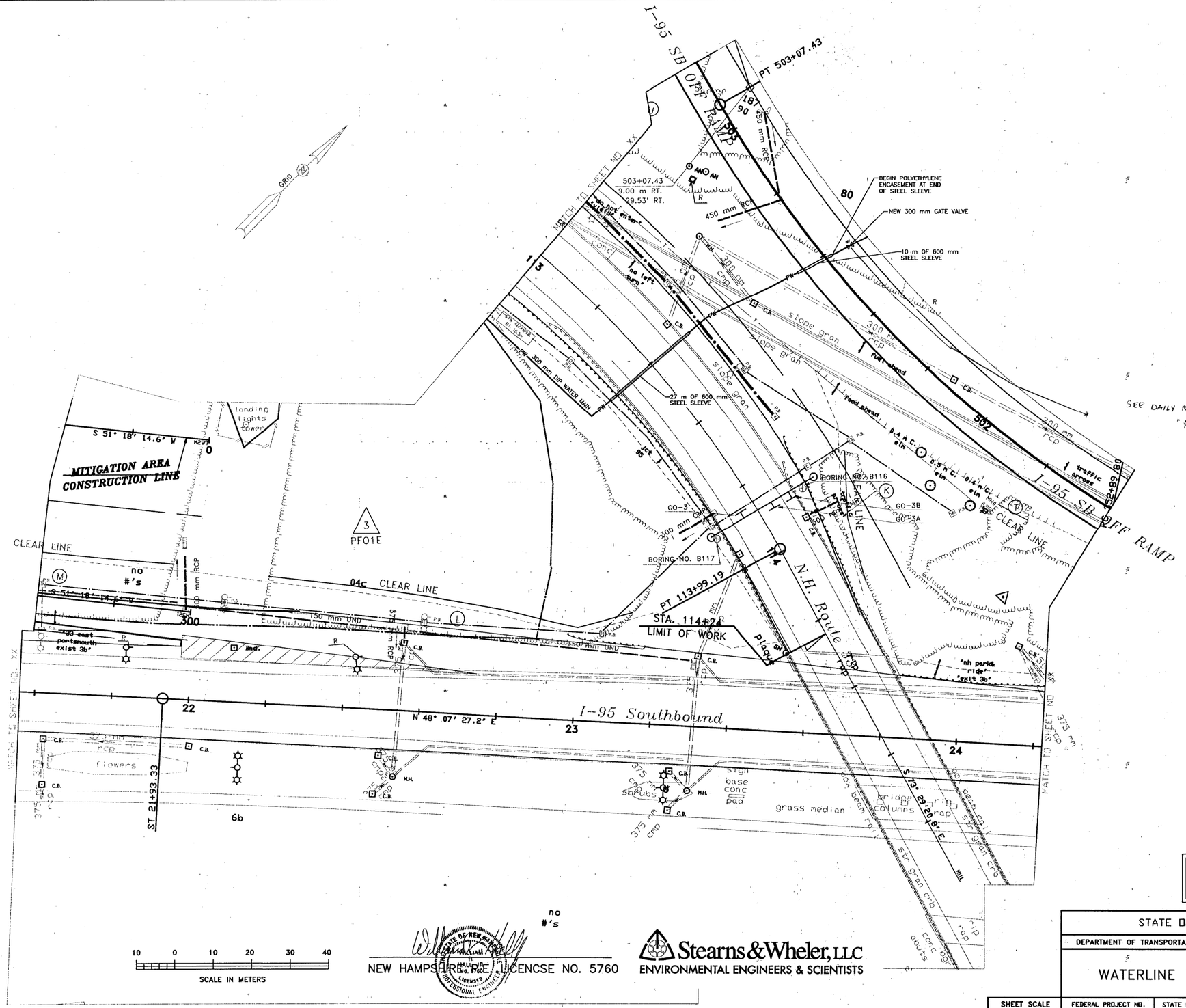
BOOK	PAGE	
BOOK	PAGE	

EXISTING DETAIL	DATE
PROPOSED DESIGN	DATE
SHEET CHECKED	DATE
AS BUILT DETAILS	DATE



10 0 10 20 30 40

SCALE IN METERS

NEW HAMPSHIRE P.E. LICENCSE NO. 5760

Stearns & Wheler, LLC
ENVIRONMENTAL ENGINEERS & SCIENTISTS

AS-BUILT PLANS

NOTE
INFORMATION ON THIS SHEET SHOULD ONLY BE CONSTRUED TO REPRESENT WATER MAIN AND APPURTENANCES. OTHER INFORMATION SHOWING STRUCTURAL ITEMS, STORM SEWER AND SANITARY SEWER IS SHOWN FOR RELATIVE RELATIONSHIPS ONLY. THIS INFORMATION SHOULD BE OBTAINED FROM OTHER DRAWINGS.

METRIC

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

WATERLINE RELOCATION PLAN

SHEET SCALE	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
1:500	CM-5379(017)	12250	146	282

REVISIONS AFTER PROPOSAL

NUMBER	DATE	DESCRIPTION	STATION

NOTEBOOKS

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	BOOK	PAGE
	BOOK	PAGE

	DATE
EXISTING DETAIL	
PROPOSED DESIGN	
SHEET CHECKED	
AS BUILT DETAILS	

MATCH TO SHEET NO. XX

PC 63+30.61

63+30.61
9.00 m LT.
29.53° LT.

0.7 n C. pine

PROPOSED HYDRANT

PC 355+92.39

PT 354+11.96

PT 503+07.43

Perimeter Road

Loon Road

R.O.W.

Existing L.A.R.O.W.

no #'s

PDA

0.6 n C. pine

0.8 n C. pine

0.9 n C. pine

0.5 n C. elm

0.5 n C. poplar

250 mm RCP

300 mm RCP

200 mm STUB FOR FUTURE CONNECTION TO COUNTRY CLUB

PT 65+28.17

65+28.17
9.00 m LT.
29.53° LT.

66+00.00
32.22 m LT.
105.71° LT.

NEW 200 mm PVC SDR 35 S = 0.005 m/m

NSMH #4
INV. IN 18.03
INV. OUT 18.00
RIM 22.00

N 57° 58' 49.41" E

STA. 65+52.10
END CM-5379(017)
(ROW PROJECT)

STA. 82+80
LIMIT OF WORK

N 57° 58' 49.41" E

NEW 300 mm GATE VALVE

TIE INTO EXISTING ROD CONNECTION

MIRASOLA, JOHN J.
& MARY C.

NSMH #5
INV. IN 18.49
INV. OUT 18.39
RIM 24.45

250 mm STUB TO PARK-N-RIDE BLDG.

PC 350+23.08

PT 350+63.02

PC 351+07.39

PT 351+42.51

N 32° 01' 10.5" W

CLEAR LINE

AFTER HOUR WAITING

NEW HYDRANT

300 mm DIP WATER MAIN WRAPPED IN POLYETHYLENE

50 mm SERVICE CONNECTION TYPE "K" COPPER

END POLYETHYLENE WRAP

150 mm NEW FIRE HYDRANT CONNECTION

150 mm NEW FIRE HYDRANT CONNECTION

PC 352+24.34

PC 352+89.80

PRC 352+99.87

PT 352+27.44

PC 500+33.52

NOTE
INFORMATION ON THIS SHEET SHOULD ONLY BE CONSTRUED TO REPRESENT WATER MAIN, SEWER MAIN AND APPURTENANCES. OTHER INFORMATION SHOWING STRUCTURAL ITEMS, STORM SEWER AND SANITARY SEWER IS SHOWN FOR RELATIVE RELATIONSHIPS ONLY. THIS INFORMATION SHOULD BE OBTAINED FROM OTHER DRAWINGS.

METRIC

10 0 10 20 30 40
SCALE IN METERS

THE STATE OF NEW HAMPSHIRE
WILLIAM J. HALL JR. No. 5760
LICENSED PROFESSIONAL ENGINEER

NEW HAMPSHIRE LICENCSE NO. 5760

Stearns & Wheler, LLC
ENVIRONMENTAL ENGINEERS & SCIENTISTS

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

WATERLINE RELOCATION & NEW SEWER LOCATION PLAN

SHEET SCALE	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
1:500	CM-5379(017)	12250	147	282

REVISIONS AFTER PROPOSAL

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NOTEBOOKS

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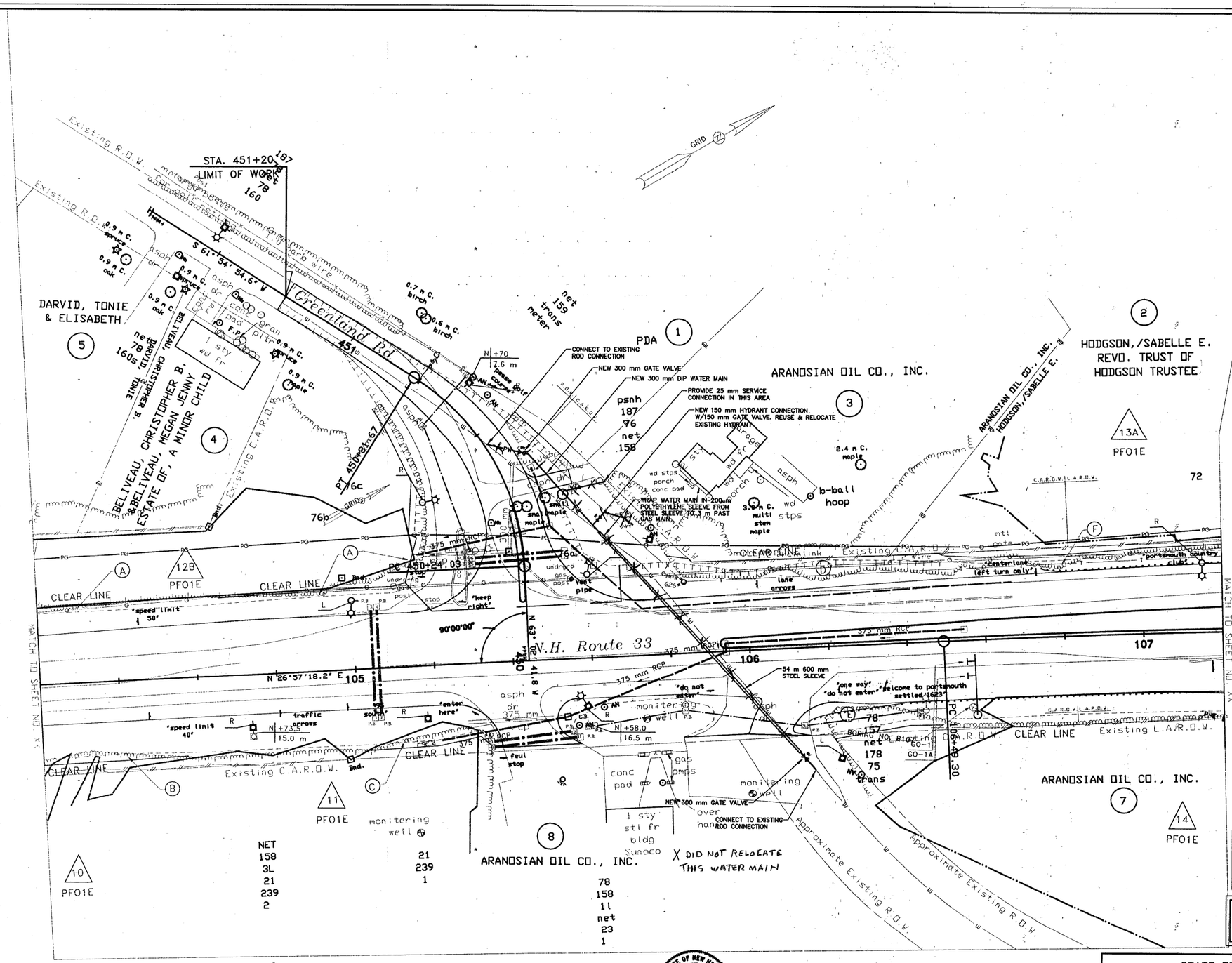
PROPOSED DESIGN	BOOK	PAGE
SHEET CHECKED	BOOK	PAGE
AS BUILT DETAILS	BOOK	PAGE

EXISTING DETAIL	DATE
PROPOSED DESIGN	DATE
SHEET CHECKED	DATE
AS BUILT DETAILS	DATE



X DID NOT RELOCATE THIS WATER MAIN

AS-BUILT PLANS

NOTE
INFORMATION ON THIS SHEET SHOULD ONLY BE CONSTRUED TO REPRESENT WATER MAIN AND APPURTENANCES. OTHER INFORMATION SHOWING STRUCTURAL ITEMS, STORM SEWER AND SANITARY SEWER IS SHOWN FOR RELATIVE RELATIONSHIPS ONLY. THIS INFORMATION SHOULD BE OBTAINED FROM OTHER DRAWINGS.

METRIC

10 0 10 20 30 40
SCALE IN METERS

THE STATE OF NEW HAMPSHIRE WILLIAM PHILIP DE MARCO 5760 LICENSED PROFESSIONAL ENGINEER

NEW HAMPSHIRE PE LICENSE NO. 5760

Stearns & Wheler, LLC
ENVIRONMENTAL ENGINEERS & SCIENTISTS

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

WATERLINE RELOCATION PLAN

SHEET SCALE	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
1:500	CM-5379(017)	12250	148	282

REVISIONS AFTER PROPOSAL

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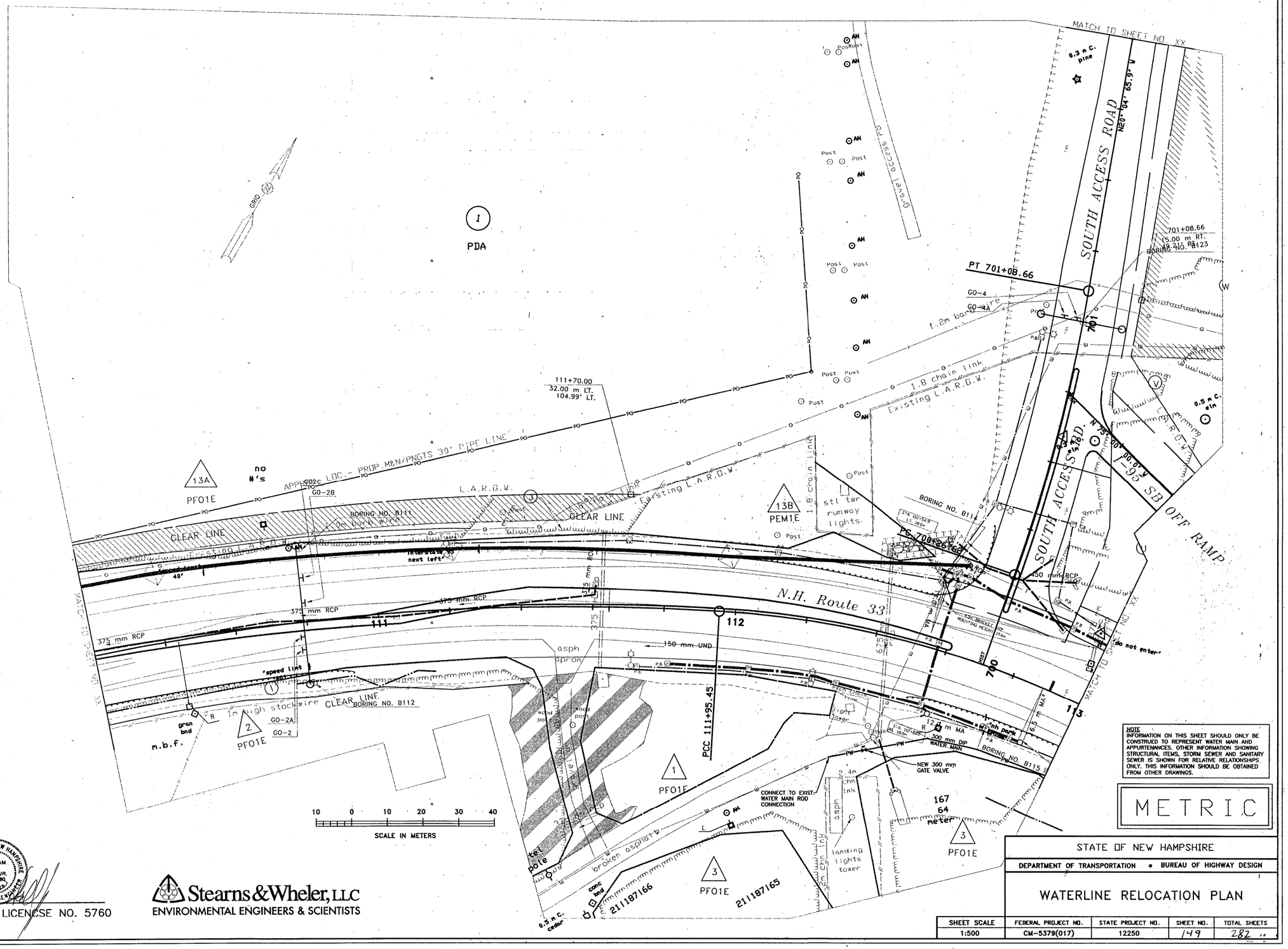
BOOK	PAGE	
BOOK	PAGE	

EXISTING DETAIL	DATE
PROPOSED DESIGN	DATE
SHEET CHECKED	DATE
AS BUILT DETAILS	DATE



NOTE
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METRIC

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

WATERLINE RELOCATION PLAN

SHEET SCALE	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
1:500	CM-5379(017)	12250	149	282

STATE OF NEW HAMPSHIRE
WILLIAM R. HALL, JR.
NO. 5760
PROFESSIONAL ENGINEER

NEW HAMPSHIRE P.E. LICENSE NO. 5760

Stearns & Wheler, LLC
ENVIRONMENTAL ENGINEERS & SCIENTISTS

REVISIONS AFTER PROPOSAL

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8
ARANOSIAN OIL CO., INC.

ARANOSIAN OIL CO., INC. 7

Approximate Existing R.O.W.

Approximate Existing R.O.W.

Existing L.A.R.O.W.

Existing L.A.R.O.W.

GRID N

1.5m wire

6 PFO1E

14 PFO1E

5 PFO1E

4 PFO1E

MATCH TO SHEET NO XX

MATCH TO SHEET NO XX

4 m 600 mm STEEL SLEEVE OVER EXISTING PIPE

no #'s

no #'s

no #'s

no #'s

PT 402+72.69

CLEAR LINE

Southbound Offramp

600 mm RCP

402

C.B.

"underground cable"

bar

slope grass

S 28° 14' 42.3" W

R503'

slope grass

fence

pad

"no u-turns"

project marker

Bnd.

I-95 Southbound

16

17

18

375 mm rcp

300 mm cmp

shrubs

grass median

PCC 18+24.17

10 0 10 20 30 40

SCALE IN METERS

WILLIAM R. HALL, JR. NO. 5760 THE STATE OF NEW HAMPSHIRE PROFESSIONAL ENGINEER

NEW HAMPSHIRE P.E. LICENCSE NO. 5760

Stearns & Wheler, LLC
ENVIRONMENTAL ENGINEERS & SCIENTISTS

NOTE
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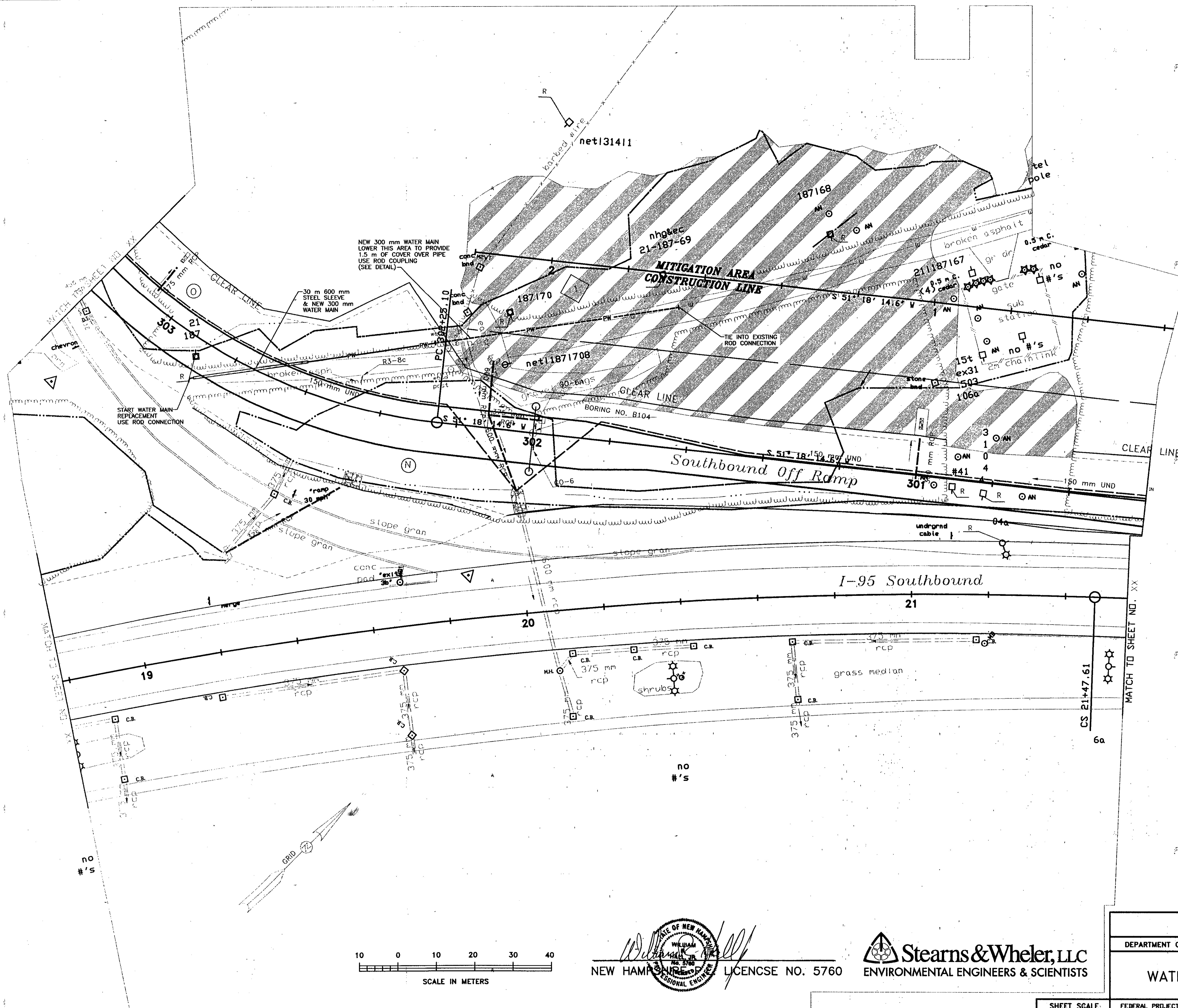
METRIC

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

WATERLINE RELOCATION PLAN

SHEET SCALE	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
1:500	CM-5379(017)	12250	150	282



NUMBER	DATE	STATION	STATION	DESCRIPTION
REVISIONS AFTER PROPOSAL				

NOTEBOOKS
BOOK PAGE
BOOK PAGE
BOOK PAGE

EXISTING DETAIL DATE
PROPOSED DESIGN DATE
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METRIC

10 0 10 20 30 40
SCALE IN METERS

NEW HAMPSHIRE LICENCSE NO. 5760

Stearns & Wheler, LLC
ENVIRONMENTAL ENGINEERS & SCIENTISTS

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

WATERLINE RELOCATION PLAN

SHEET SCALE	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
1:500	CM-5379(017)	12250	151	282

DID NOT LOWER DUE TO ADEQUATE DEPTH OF 2.4m
ALSO EXISTING FENCE LINE RUNNING PARALLEL + UNDER FENCE LINE

Grafton Drive

South Access Road

Sherburne Road

Crawford Mass Drive

LOWER WATERMAIN THIS AREA

START WATERMAIN RELOCATION

NEW 250 mm DIP

250 mm TRANSITE

250 mm TRANSITE

MOVE EXISTING HYDRANT TO 1.5 m OFF PROPOSED CURB

NEW 150 mm HYDRANT CONNECTION

NEW 250 mm DIP WATER MAIN

RELOCATE EXISTING HYDRANT

END WATERMAIN RELOCATION

STA. 710+30.0
LIMIT OF WORK

PC 708+03.12

PT 709+71.5

N 01° 02' 32.5" W

N 58° 26' 08.1" E

CLEAR LINE

2.4m chainlink

1.8m chainlink & barbed wire

1.3m chainlink

gravel road

paved drive

asph dr

conc steps

brick house #120

#818

#10

garage

#40-n-6

#2-40-n5

#2-40-n-7

#4-40-n4

#4-40-N3

#2-40-n-4

#4-40-n-8

#432 16a

no #'s

wood utility pole

underground pump hs

Vent pipe

(8) 0.5m dia. cedar trees

bushes & boulders

300 mm cmp

450 mm RCP

1.2 m cul

1.8 m cul

0.7 m.c. pine

0.5 m.c. triple oak

0.7 m.c. oak

1.0 m.c. maple

1.0 m.c. triple oak

1.5 m.c. oak

1.0 m.c. oak

1.0 m.c. pine

1.7 m.c. pine

1.5 m.c. oak

1.0 m.c. ash

3.0 m.c. oak

0.5 m.c. cedar

4.0 m.c. pine

0.3 m.c. cherry

1.0 m.c. cherry

(S)0.8 m.c. spruce

1.5 m.c. hardwood

0.4 m.c. cedar

0.5 m.c. hardwood

0.8 m.c. cedar

1.3 m.c. dead pine

3.0 m.c. oak

1.0 m.c. red pine

0.8 m.c. hemlock

0.5 m.c. locust

1.0 m.c. spruce

psnh 432b 5 6 95b 2 net

psnh 432b 4

psnh 432b 2

psnh 432b 1

psnh 432a 4

psnh 432a 3

psnh 432a 2

psnh 432 16c 24 net

psnh 432 16b net 29

psnh 432 16a 95 nex 22

95a 95b psnh 432a 95 4 net

95-24

net 26

21-239-1

5 GRID

AN

DD

CC

MH

sty wo hs

shed

garage

wood steps

concrete steps

stone fw

conc sw

conc slab

conc pad

NOTE
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METRIC

AS-BUILT PLANS

10 0 10 20 30 40
SCALE IN METERS

WILLIAM H. HALL, JR. NO. 5760 — THE STATE OF NEW HAMPSHIRE — LICENSED PROFESSIONAL ENGINEER

NEW HAMPSHIRE LICENCSE NO. 5760

Stearns & Wheler, LLC
ENVIRONMENTAL ENGINEERS & SCIENTISTS

REVISIONS AFTER PROPOSAL

DESCRIPTION	STATION	STATION	DATE	NUMBER

NOTEBOOKS

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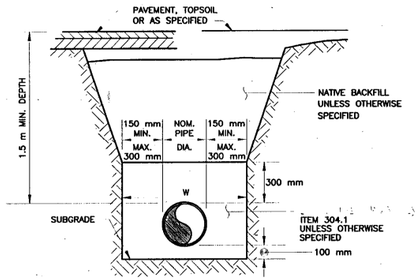
STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

WATERLINE RELOCATION PLAN

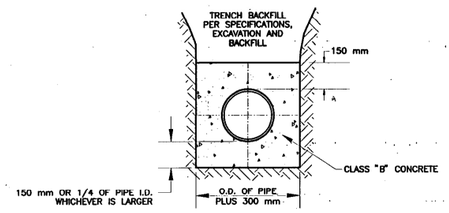
SHEET SCALE	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
1:500	CM-5379(017)	12250	152	282



NORMAL WATER TRENCH DETAILS

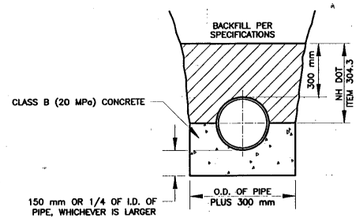
NOTE:

1. SAFETY STANDARDS MAY DICTATE A MODIFICATION IN TRENCH SIDE SLOPES. CONTRACTOR IS RESPONSIBLE FOR MEETING ALL APPLICABLE SAFETY STANDARDS.
2. MAXIMUM PAYMENT LIMIT (W) – WHERE USE OF TRENCH SHIELD IS REQUIRED TO MEET SAFETY STANDARDS DUE TO DEPTH OF PIPE OR SOIL CONDITIONS, THEN MAXIMUM LIMIT TO BE OUTSIDE WIDTH OF SHIELD. QUANTITIES TO BE COMPUTED ON THAT WIDTH AS MEASURED BY THE ENGINEER.



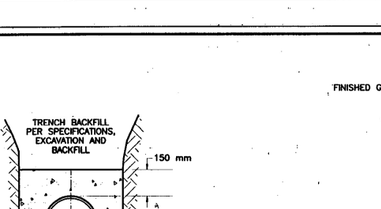
PLAIN CONCRETE ENCASEMENT

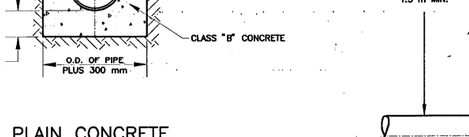
TYPE VI

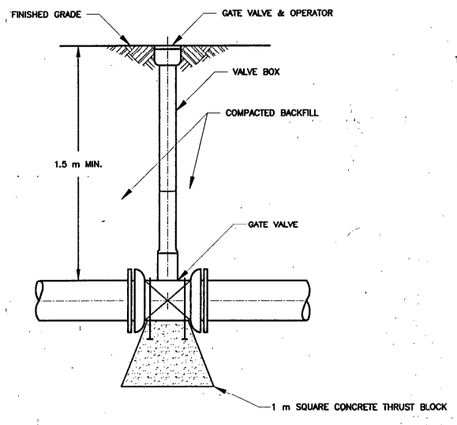


CONCRETE CRADLE

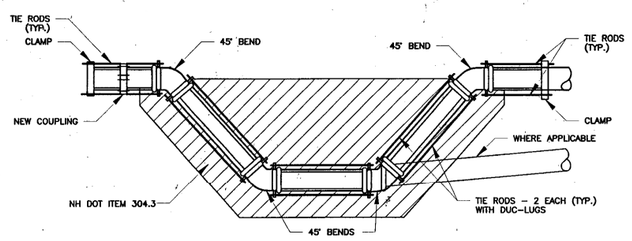
TYPE V



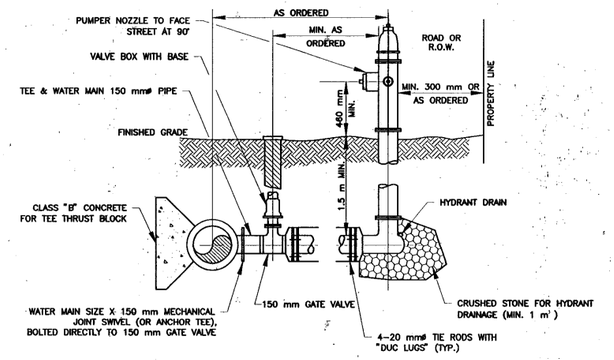




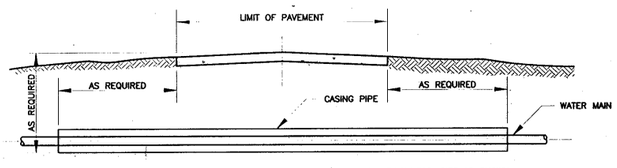
TYPICAL UNDERGROUND GATE VALVE INSTALLATION

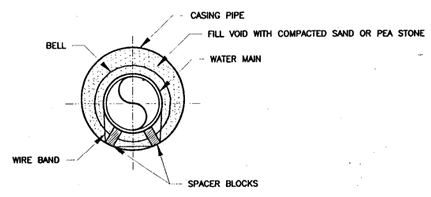


WATER MAIN RELOCATION AND MINIMUM SEPARATION DETAIL



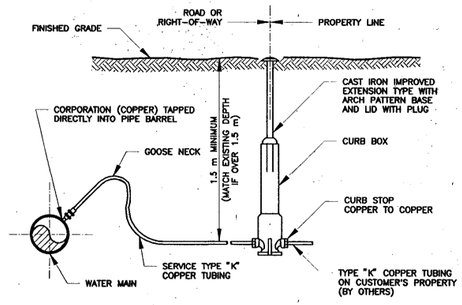
TYPICAL HYDRANT DETAIL





TYPICAL HIGHWAY CROSSING DETAIL

THRUST BLOCK DIMENSIONS FOR AVERAGE SOIL CONDITIONS												
UP TO 1000 kPa WORKING PRESSURE												
PIPE SIZE	PLUG, CAP, TEE OR TAP SLEEVE		90° BEND		45° BEND		22 1/2° BEND		11 1/4° BEND			
	H	L	H	L	H	L	H	L	H	L	H	L
300 mm	600 mm	1.25 m	600 mm	1.25 m	600 mm	660 mm	460 mm	460 mm	380 mm	380 mm		
250 mm	500 mm	1 m	500 mm	1 m	500 mm	600 mm	400 mm	400 mm	300 mm	300 mm		
200 mm	400 mm	800 mm	400 mm	800 mm	400 mm	450 mm	300 mm	300 mm	225 mm	300 mm		
150 mm	300 mm	600 mm	300 mm	600 mm	300 mm	400 mm	225 mm	300 mm	150 mm	300 mm		



SERVICE CONNECTION

WATER NOTES

1. WATER MAIN PIPE SHALL BE CLASS 52 DUCTILE IRON.
2. WATER MAINS SHALL BE BURIED AT A MINIMUM DEPTH TO THE CROWN OF 1.5 m.
3. WATER MAINS UNDER STATE HIGHWAYS SHALL BE SLEEVED IN A 600 mm WELDED STEEL PIPE. THE CROWN OF THE STEEL SLEEVE SHALL BE AT A MINIMUM OF 2 m BELOW FINISHED GRADE.
4. WATER MAINS SHALL BE PRESSURE TESTED IN ACCORDANCE WITH NH-DES REGULATIONS PRIOR TO BEING PLACED INTO SERVICE.
5. WATER MAINS SHALL BE DISINFECTED IN ACCORDANCE WITH NH-DES REGULATIONS PRIOR TO BEING PLACED INTO SERVICE.
6. WATER MAIN SHALL NOT BE TAKEN OUT OF SERVICE FOR LONGER THAN FOUR(4) HOURS. CONTRACTOR SHALL NOTIFY THE CITY OF PORTSMOUTH WATER DEPARTMENT THREE BUSINESS DAYS(72 HOURS) PRIOR TO TAKING THE WATER MAIN OUT OF SERVICE.

REVISIONS AFTER PROPOSAL

NUMBER	DESCRIPTION	STATION	STATION	DATE

NOTEBOOKS

EXISTING DETAIL	BOOK	PAGE	DATE
PROPOSED DESIGN	BOOK	PAGE	DATE
SHEET CHECKED	BOOK	PAGE	DATE
AS BUILT DETAILS	BOOK	PAGE	DATE

NEW HAMPSHIRE LICENSE NO. 5760

Stearns & Wheler, LLC
ENVIRONMENTAL ENGINEERS & SCIENTISTS

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

WATER MAIN RELOCATION DETAILS

FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
CM-5379(017)	12250	153	282

REVISIONS AFTER PROPOSAL

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CONTOUR PLAN
PARKING LOT
RETENTION POND
Country Club Lane
"no alcoholic beverages"
N 81° 39' 43.0" W
121.92m (400 ft.) WELL PROTECTION AREA RADIUS
PC 63+30.61
0.7 n.C. pine
63+30.61
29.53 m LT.
PDA
1
WELL PROTECTION ZONE
Loon Road
asphalt
no #'s meter
3rd. L. 1.2 n.C. double oak
psnh 432 32b
no #'s
Existing L.A.R.O.W.
Approximate Existing R.O.W.
0.6 n.C. pine
0.9 n.C. pine
0.9 n.C. pine
121.92m (400 ft.) WELL PROTECTION AREA RADIUS
65+28.17 PT
200 mm STUB FOR FUTURE CONNECTION TO COUNTRY CLUB
PROPOSED HYDRANT
150 mm STUB TO PARK-N-RIDE BLDG.
NSMH #5 INV. IN 18.49 INV. OUT 18.39 RIM 24.45
NEW 200 mm PVC SDR 35 S = 0.0075 m/m
PS
350
65+83.02 PT
PC 65+29.22
R.O.W.
66+00.08
105.31 LT.
65+23.17
29.53 m RT.
NSMH #4 INV. IN 18.03 INV. OUT 18.00 RIM 22.00
M146
N 57° 58' 49.4" E
M108
DAY, ARTHUR K.
PDA
DAY, ARTHUR K.& ELIZABETH F.
NSMH #3 INV. IN 17.25 INV. OUT 17.22 RIM 19.45
NEW 200 mm PVC SDR 35 S = 0.0075 m/m
psnh 100 9a1 net 95 9s
NSMH #2 INV. IN 16.57 INV. OUT 16.54 RIM 18.40
1.8 n.C. oak
2.5 n.C. oak
NSMH #1 INV. IN 16.47 RIM 18.31±
TIE INTO EXISTING 250 mm VC ON SHERBORNE ROAD
MIRASOLA & MARY A. JOHNSON
MIRASOLA, JOHN J. & NEWBURY, CAROL J.
MCMURPHY - CRUDDY
2.0 n.C. oak
Approximate Existing R.O.W.
GRID N
MIRASOLA, JOHN J.
ESBERG, JAMES D.
JAMES D.

NOTE
INFORMATION ON THIS SHEET SHOULD ONLY BE CONSTRUED TO REPRESENT SEWER MAIN AND APPURTENANCES. OTHER INFORMATION SHOWING STRUCTURAL ITEMS, STORM SEWER AND WATER MAINS IS SHOWN FOR RELATIVE RELATIONSHIPS ONLY. THIS INFORMATION SHOULD BE OBTAINED FROM OTHER DRAWINGS.

METRIC

10 0 10 20 30 40
SCALE IN METERS

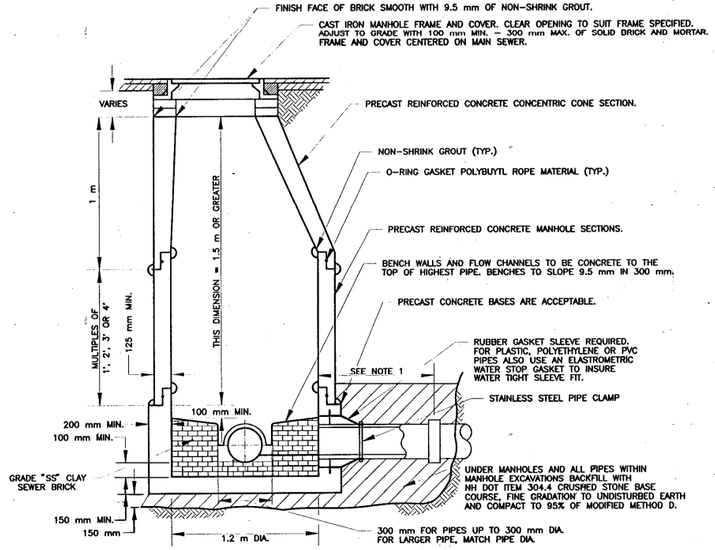
WILLIAM M. HAIL JR. NO. 5760 STATE OF NEW HAMPSHIRE PROFESSIONAL ENGINEER
NEW HAMPSHIRE P.E. LICENCSE NO. 5760

Stearns & Wheler, LLC
ENVIRONMENTAL ENGINEERS & SCIENTISTS

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

PROPOSED SEWER PLAN

SHEET SCALE	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
1:500	CM-5379(017)	12250	154	282



TYPE A – 1.2 m DIAMETER MANHOLE

~~TYPE B – 1.5 m DIAMETER MANHOLE~~

USE NON-SHRINK GROUT

MANHOLE DETAIL

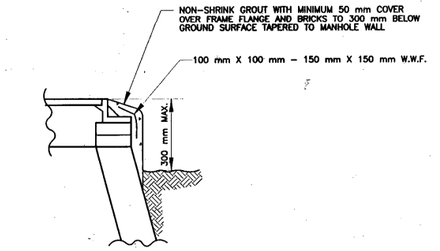
NTS

MANHOLE NOTES

1. ON ALL PIPES, AT ALL MANHOLES, METER STATIONS, WET WELLS, VALVE PITS AND OTHER UNDERGROUND STRUCTURES, TWO (2) PIPE JOINTS SHALL BE INSTALLED WITHIN 1.2 m FROM OUTSIDE FACE OF MANHOLE OR STRUCTURE WALL.
2. MANHOLE STEPS SHALL NOT BE FURNISHED.
3. CONCENTRIC CONES ARE TO BE FURNISHED AND INSTALLED ON ALL TYPES OF MANHOLES.
4. FOR SHALLOW MANHOLES, VARY HEIGHT OF BASE SECTION BY CAST-IN-PLACE OR PRECAST MANHOLE BASES TO PERMIT CONCENTRIC CONE INSTALLATION.
5. IN EXISTING MANHOLES SHEDULED FOR REHABILITATION AND AT EXISTING MANHOLES THAT NEW SEWERS ARE CONNECTED TO, THE EXISTING CHANNEL WALLS AND BENCHES ARE TO BE RECONSTRUCTED AND RAISED TO TOP OF PIPES.
6. MANHOLE FRAMES ARE TO BE INSTALLED 9.5 mm BELOW AND MATCH SLOPE OF STREET GRADIENTS AND/OR CROWN OF PAVEMENT, DRIVEWAYS, PARKING AREAS, LAWNS AND OTHER LOCATIONS UNLESS OTHERWISE SPECIFIED. IN WALK AREAS, MATCH FRAME WITH WALK SURFACE AND SLOPE. IN UNCULTIVATED AREAS SET TOP OF FRAME AND COVER A MINIMUM OF 150 mm ABOVE EXISTING GROUND SURFACE UNLESS OTHERWISE SPECIFIED.
7. NEW LATERALS TO CONNECT TO EXISTING LATERALS WITH AN APPROVED ADAPTOR COUPLING.
8. EACH NEW SEWER LATERAL SHALL NOT BE BACKFILLED UNTIL INSPECTED BY OWNER'S PLUMBING INSPECTOR AND PHOTOGRAPHED BY ENGINEER.
9. IN LONG SEWER LATERAL RUNS THE CONTRACTOR SHALL PROVIDE, EVERY 25 METERS, A WYE CLEANOUT FITTING, EXTENDED TO THE GROUND SURFACE WITH CAST IRON PIPE AND THREADED BRONZE PLUG.

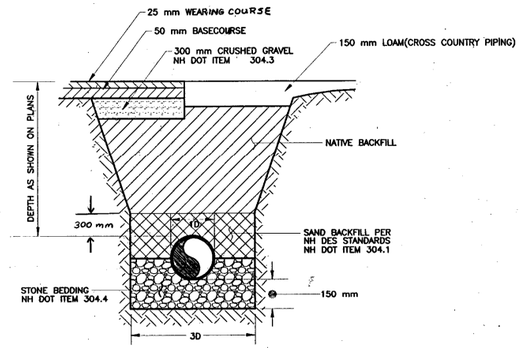
SEWER NOTES

1. SANITARY SEWER PIPE SHALL BE NEW SDR 35 BELL AND SPIGOT WITH GASKET JOINTS. BELLS LAID ON UP SLOPE END.
2. MINIMUM DEPTH OF BURY TO CROWN SHALL BE 1.22 m.
3. SEWER MANHOLES TO BE 1.2 m INSIDE DIAMETER PRECAST CONFORMING TO ASSHTO M 199M. CONCRETE SHALL BE CLASS AA.
4. RUBBER GASKETS SHALL BE PROVIDED BETWEEN EACH MANHOLE SECTION.
5. MANHOLE FRAMES AND COVERS SHALL BE A MINIMUM OF 750 mm IN DIAMETER AND SHALL BE H20 WHEEL LOAD RATED WITH THE WORD "SEWER" IN 75 mm RAISED LETTERS.
6. SOLID CLAY SEWER BRICK SHALL BE USED FOR ALL INVERTS AND FRAME ADJUSTMENTS.
7. PRECAST RINGS SHALL NOT BE USED TO RAISE THE MANHOLE FRAME AND COVER TO GRADE. NO MORE THAN 4 COURSES OF BRICK AND NO FEWER THAN 1 COURSE OF BRICK SHALL BE USED TO SET THE MANHOLE FRAME AND COVER TO FINISHED GRADE.
8. SEWER LINES AND MANHOLES SHALL BE CLEANED AND PRESSURE TESTED IN ACCORDANCE WITH NH-DES REGULATIONS PRIOR TO BEING PLACED INTO SERVICE.



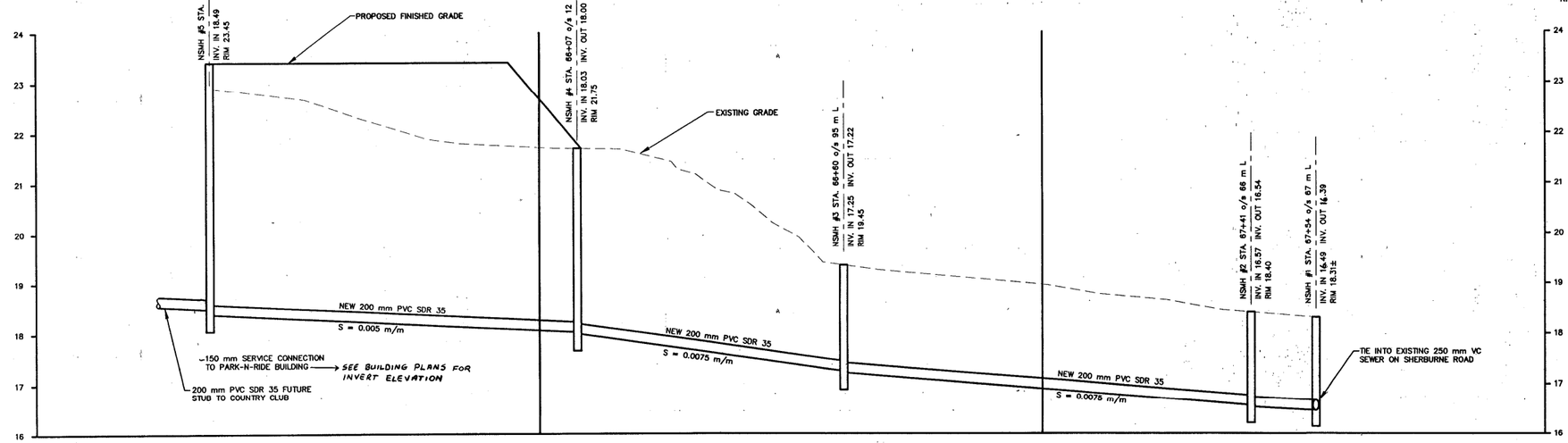
GROUTING DETAIL EXPOSED MANHOLES

N.T.S.



SEWER PIPE BEDDING DETAIL

N.T.S.



SEWER PROFILE

SCALE: 1:500 HORIZ.
1:50 VERT.

SUPERSEDED
DATE NOV 10 1998

NOTES
1. PROFILE SKEWED
2. LAYOUT BASED ON LOOP ROAD LAYOUT LINE

REVISIONS AFTER PROPOSAL

NUMBER	DESCRIPTION	STATION	DATE	STATION

NOTEBOOKS

BOOK	PAGE	BOOK	PAGE	BOOK PAGE

EXISTING DETAIL	DATE
PROPOSED DESIGN	DATE
SHEET CHECKED	DATE
AS BUILT DETAILS	DATE

THE STATE OF NEW HAMPSHIRE WILLIAM R. HALL JR. No. 5760 REGISTERED PROFESSIONAL ENGINEER

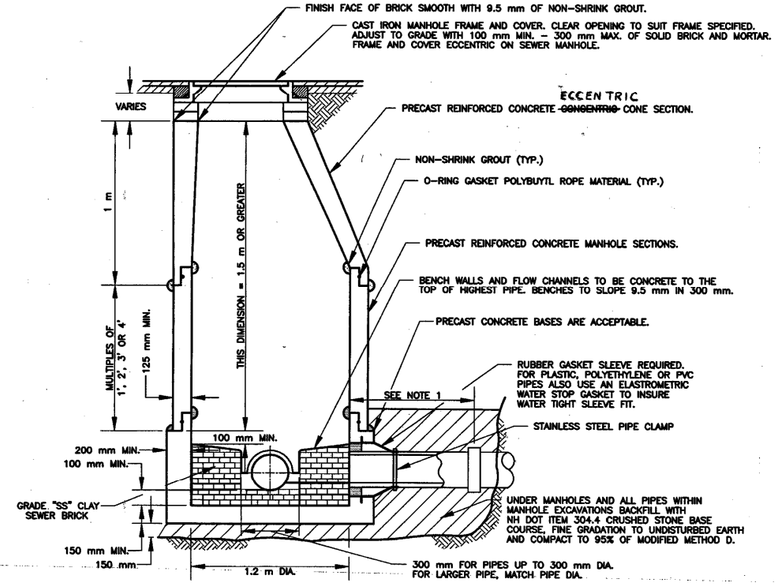
NEW HAMPSHIRE LICENSE NO. 5760

Stearns & Wheler, LLC
ENVIRONMENTAL ENGINEERS & SCIENTISTS

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

SEWER PROFILE & DETAILS

FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
CM-5379(017)	12250	155	282



TYPE A – 1.2 m DIAMETER MANHOLE
~~TYPE B – 1.5 m DIAMETER MANHOLE~~

USE NON-SHRINK GROUT

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3. SEWER MANHOLES TO BE 1.2 m INSIDE DIAMETER PRECAST CONFORMING TO ASSHTO M 199M. CONCRETE SHALL BE CLASS AA.
4. RUBBER GASKETS SHALL BE PROVIDED BETWEEN EACH MANHOLE SECTION.
5. MANHOLE FRAMES AND COVERS SHALL BE A MINIMUM OF 800 mm IN DIAMETER AND SHALL BE H20 WHEEL LOAD RATED WITH THE WORD "SEWER" IN 75 mm RAISED LETTERS.
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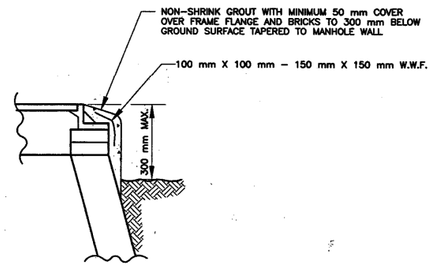
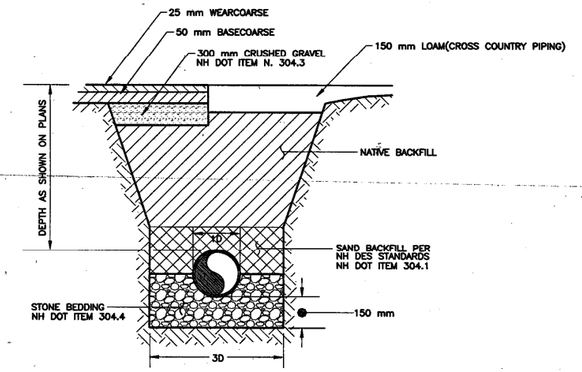
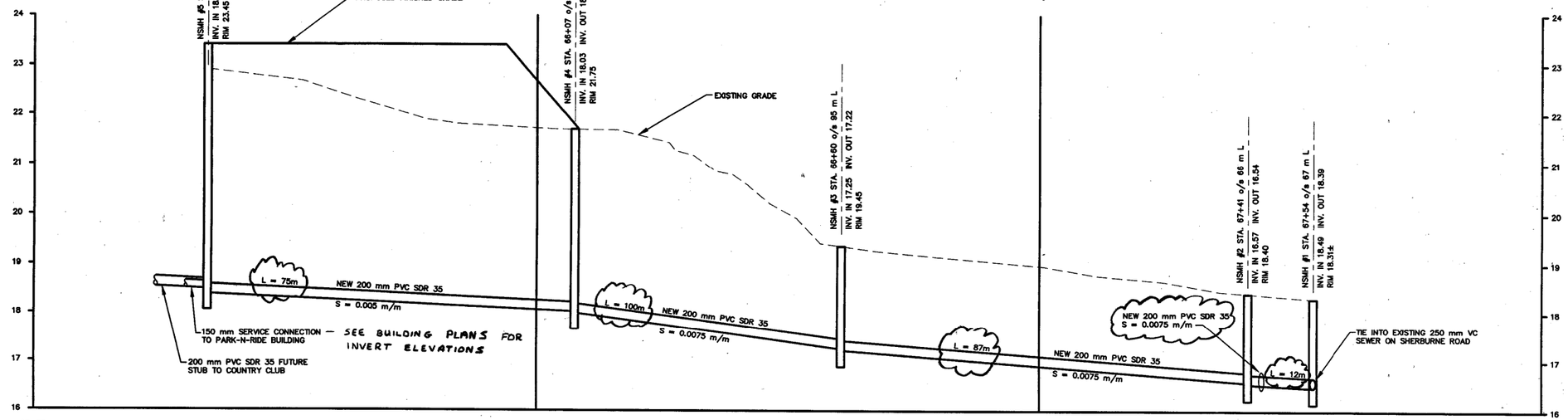


GROUTING DETAIL EXPOSED MANHOLES
N.T.S.



SEWER PIPE BEDDING DETAIIL
N.T.S.



SEWER PROFILE
SCALE: 1:500 HORIZ.
1:50 VERT.

NOTES
1. PROFILE SKEWED
2. LAYOUT BASED ON LOOP ROAD LAYOUT LINE

William M. Hall, Jr.
NEW HAMPSHIRE P.E. LICENSE NO. 5760

Stearns & Wheler, LLC
ENVIRONMENTAL ENGINEERS & SCIENTISTS

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN
SEWER PROFILE & DETAILS

FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
CM-5379(017)	12250	155 A	282

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	DESCRIPTION

NOTEBOOKS

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BOOK		PAGE
BOOK		PAGE

	DATE
EXISTING DETAIL	
PROPOSED DESIGN	
SHEET CHECKED	
SHEET REVISED	11-10-98
AS BUILT DETAILS	

METRIC

SCALE 1:500

N.H. Route 33

109 110 111 112

N.H. Route 33

ZONE 1 (Z-1)
ZONE 2 (Z-2)

KEY	ITEM DESCRIPTION		QUANTITY	SPACING	NOTES
	SLOPE SEED TYPE 44		10 KG	--	SLOPES OF ACCESS DRIVE (TRANSITION AREA)
Z-1/Z-2	WETLAND SEED MIX		15 KG	--	WETLAND
	WHITE SPRUCE 1.3M B&B		25 EA	VARIES	OPEN AREAS ALONG WETLAND PERIMETER
Z-1/Z-2	RED MAPLE 1.0M C.G.	(*)	50 EA	VARIES	WETLAND BASIN
	AMUR MAPLE 1.3M CLUMP B&B		7 EA	VARIES	OPEN AREAS ALONG WETLAND PERIMETER
Z-1/Z-2	SPECKLED ALDER 0.8M C.G.	(*)	100 EA	VARIES	WETLAND BASIN
	SUMMERSWEET 0.5M C.G.		16 EA	2.5M	SLOPE TOES OF ACCESS DRIVE
Z-1/Z-2	SILKY DOGWOOD 0.8M C.G.	(*)	71 EA	VARIES	WETLAND BASIN
	GRAY DOGWOOD 0.5M C.G.		16 EA	2.5M	SLOPE TOES OF ACCESS DRIVE
Z-1/Z-2	COMMON WITCH-HAZEL 0.8M C.G.	(*)	50 EA	VARIES	WETLAND BASIN
Z-1/Z-2	COMMON WINTERBERRY HOLLY 0.8M C.G.		75 EA	2.5M	CHANNELS OF WETLAND BASIN, 10 GROUPS OF 7, 1 GROUP OF 5
Z-1/Z-2	PUSSY WILLOW 0.8M C.G.		75 EA	2.5M	WETLAND BASIN, 25 GROUPS OF 3
Z-1/Z-2	ARROWWOOD 0.8M C.G.	(*)	75 EA	VARIES	WETLAND BASIN
	NANNYBERRY 1.3M B&B		8 EA	VARIES	OPEN AREAS ALONG WETLAND PERIMETER
	HAY-SCENTED FERN 2 LITER C.G.		51 EA	1.5M	ALONG SLOPES OF ACCESS DRIVE

INTERMIX THE ASTERISKED PLANTS (*) AT A 5.5M SPACING AND AMONGST GROUPS OF WINTERBERRY AND PUSSY WILLOW.

ZONE 1
WETLAND AREA = 82,109 SF (1.88 AC)
7,628 m2 (0.76 ha)
252 PLANTS @ 5.5m SPACING

ZONE 2
WETLAND AREA = 79,358 SF (1.82 AC)
7,372 m2 (0.74 ha)
244 PLANTS @ 5.5m SPACING

CENTER OF PLANTING INTERVAL = 25m

CENTER OF PLANTING INTERVAL = 20m

1.8m TRANSITION AREA

ACCESS DRIVE

MITIGATION AREA CONSTRUCTION LINE

S 51° 18' 14.6" W

MZW1 2 1 0

MITIGATION AREA CONSTRUCTION LINE
45.0 m OFFSET FROM SB OFF RAMP (EXIT 3B) ALIGNMENT

303 302 301 300

Southbound Off Ramp (Exit 3B)

I-95

GRID N

WATERLINE ACCESS PATH
TYPICAL
SCALE = 50:1

WETLAND | 1.8m TRANSITION AREA | 1.5m | 0.6m | 1.5m | 1.8m TRANSITION AREA | WETLAND

ITEM - 644.44 SLOPE SEED TYPE 44 — 4:1 — 10:1 — 10:1 — 4:1 — ITEM - 644.44 SLOPE SEED TYPE 44

ITEM - 644.770 WETLAND SEED MIX — ITEM - 644.770 WETLAND SEED MIX

ALTERATION IN DESIGN
09/30/98

- TERM "TRANSISION AREA" ADDED TO TABLE
- ROAD NAMES ADDED

REVISIONS AFTER PROPOSAL

NUMBER	DATE	DESCRIPTION

NOTEBOOKS

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BOOK		PAGE
BOOK		PAGE

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AS BUILT DETAILS	DATE

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

LANDSCAPING PLANS

MULTIPLOT NAME	WINDOW NAME	.FGB FILENAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
LANDSCA1.DAT	LANDSCAP	PROP_IN	CM-5379(017)	12250	156	282

METRIC

SCALE 1:500

ZONE 1 (Z-1)
ZONE 2 (Z-2)

KEY	ITEM DESCRIPTION		QUANTITY	SPACING	NOTES
	SLOPE SEED TYPE 44		10 KG	--	SLOPES OF ACCESS DRIVE
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244 PLANTS @ 5.5m SPACING

109 110 111 112 303 302 301 300

S 51° 18' 14.6" W

MGWT 2 MGWT 1 MGWT 0

CENTER OF PLANTING INTERVAL = 40m

CENTER OF PLANTING INTERVAL = 25m

TRANSITION AREA

1.8m 3.6m 1.8m

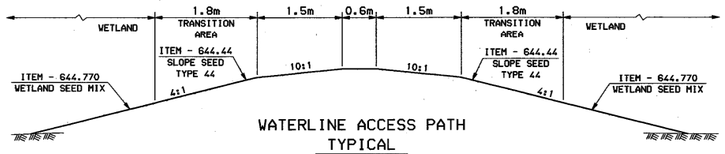
MITIGATION AREA CONSTRUCTION LINE

45.0 m OFFSET FROM SB OFF RAMP (EXIT 3B) ALIGNMENT

GRID N

SUPERSEDED
DATE 9-30-98

WATERLINE ACCESS PATH
TYPICAL
SCALE = 50:1



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BOOK		PAGE
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PROPOSED DESIGN	DATE
SHEET CHECKED	DATE
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STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

LANDSCAPING PLANS

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