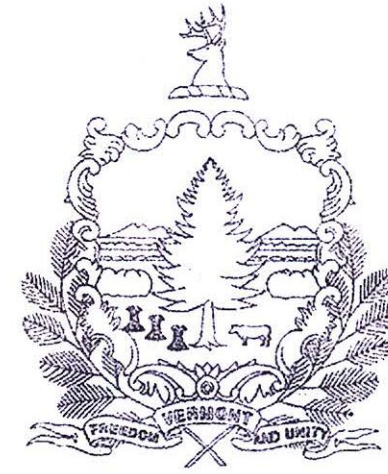
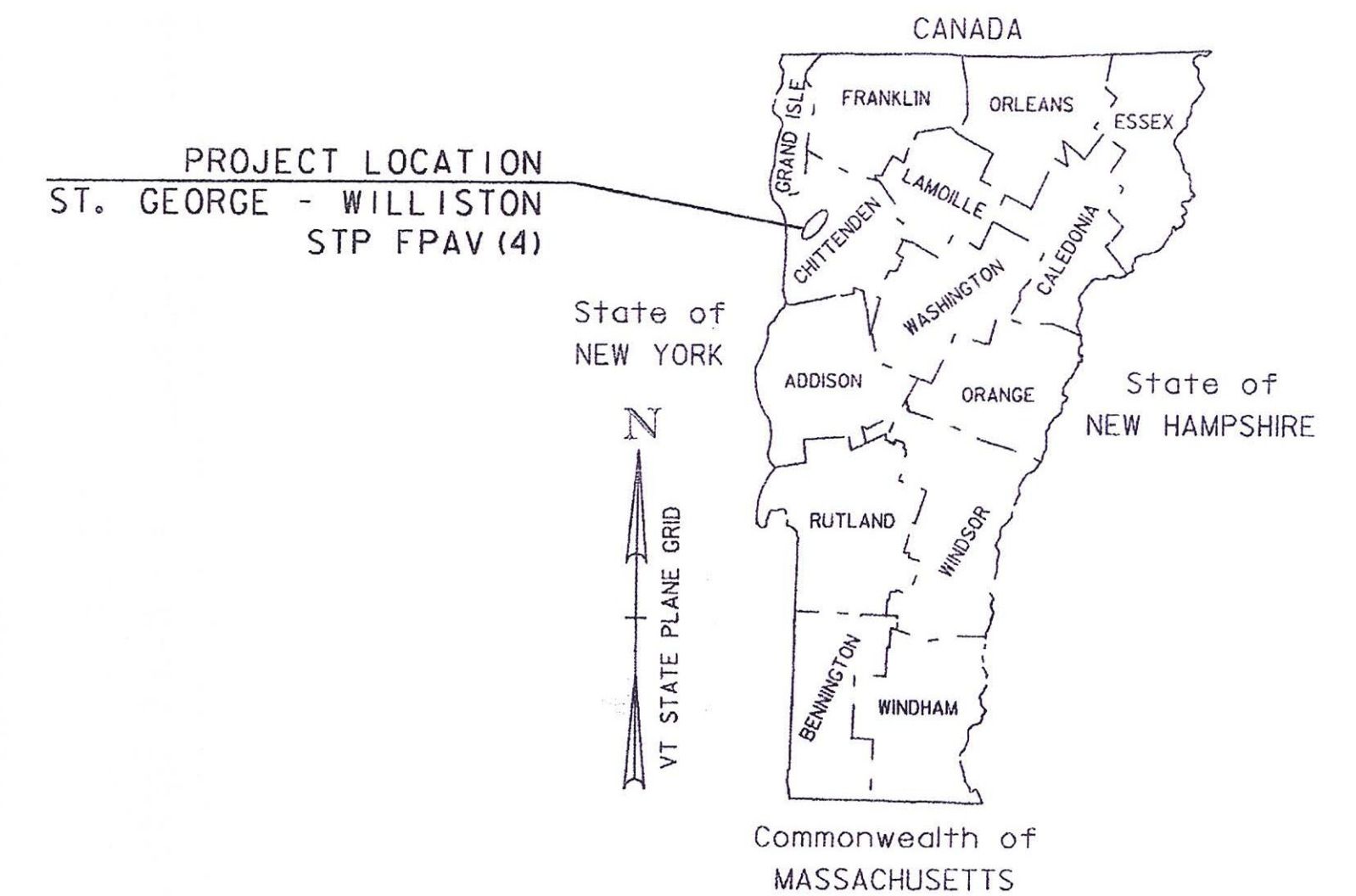


STATE OF VERMONT AGENCY OF TRANSPORTATION



PROPOSED IMPROVEMENT TOWNS OF ST. GEORGE AND WILLISTON COUNTY OF CHITTENDEN VT ROUTE 2A - MINOR ARTERIAL / MAJOR COLLECTOR

BEGINNING IN THE TOWN OF ST. GEORGE AT THE INTERSECTION OF
VT ROUTE 116 AND VT ROUTE 2A (MM 0.018) AND EXTENDING NORTHERLY
ALONG VT ROUTE 2A THROUGH THE TOWN OF ST. GEORGE AND INTO WILLISTON
FOR A DISTANCE OF APPROXIMATELY 4.768 MILES TO MM 2.804

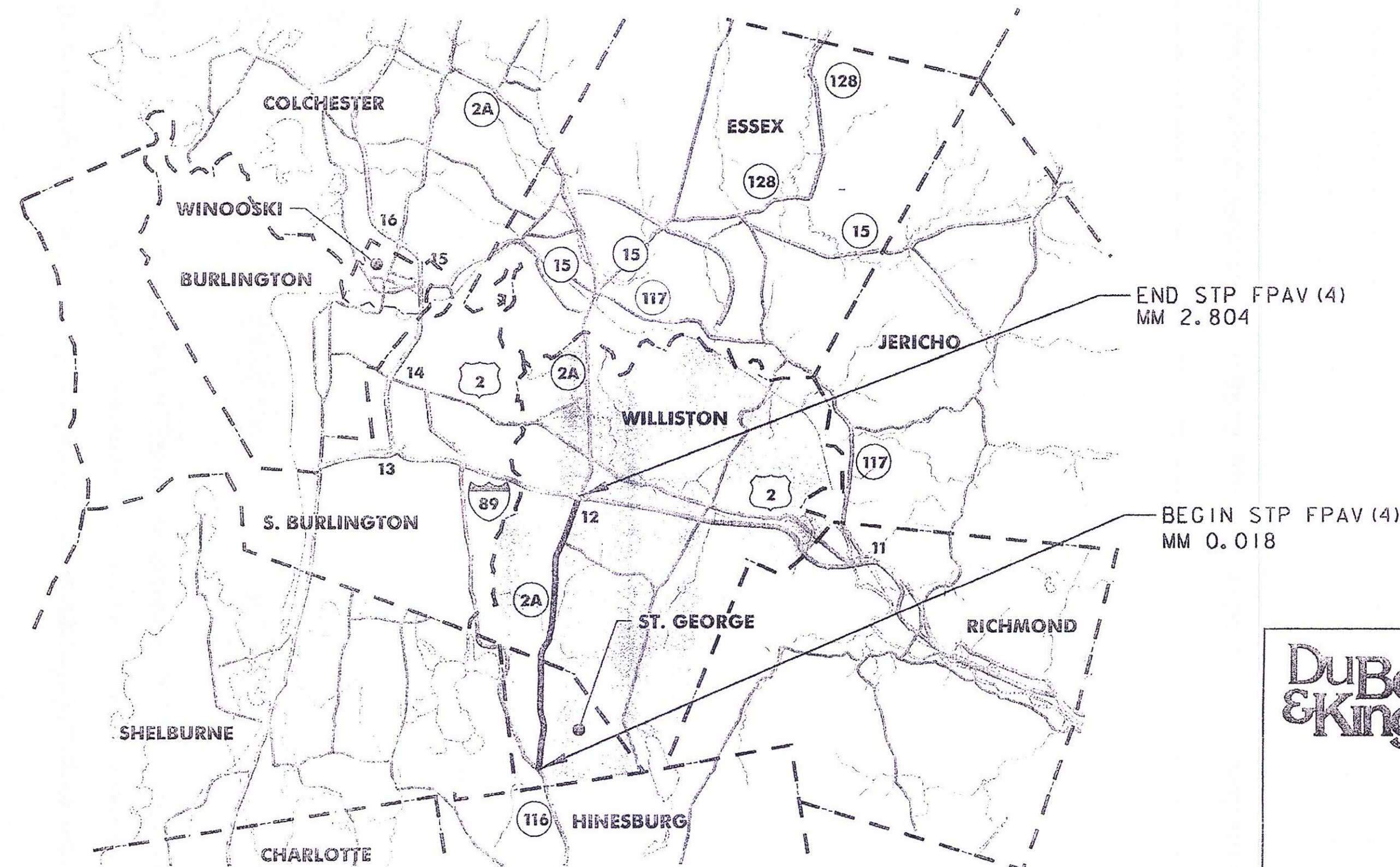
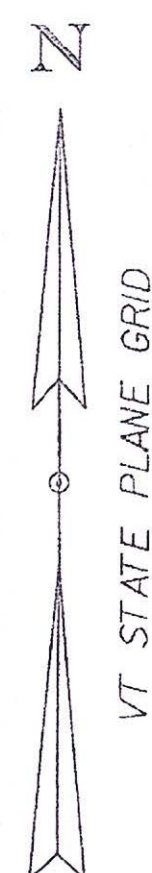


RECORD PLANS	
CONTRACTOR:	ENGINEERS CONSTRUCTION, INC. - S. BURLINGTON, VT
RESIDENT ENGINEER:	CHRIS ACHILLES
CONSTRUCTION BEGAN:	AUGUST 26, 2016
CONSTRUCTION COMPLETE:	NOVEMBER 9, 2016
RECORD PLANS BY:	CHRIS ACHILLES & JESSE IVES
I HEREBY CERTIFY THAT ALL THE CONSTRUCTION REQUIRED BY THIS SET OF DRAWINGS HAS BEEN ACCOMPLISHED AS INDICATED HEREIN.	
BY	RESIDENT ENGINEER
DATE	12/22/17
NOTE: Any further information concerning final quantities, amounts or other details relative to this project may be found at Central Files in the electronic archives.	

	LENGTH (FEET)	(MILES)
TOWN OF ST. GEORGE MM 0.018 TO MM 1.982	10,369.92	= 1.964
TOWN OF WILLISTON MM 0.000 TO MM BT 2.804	14,805.12	= 2.804
PROJECT TOTALS	25,175.04	= 4.768

RECORD PLANS
See changes on pages 10,11,12,13

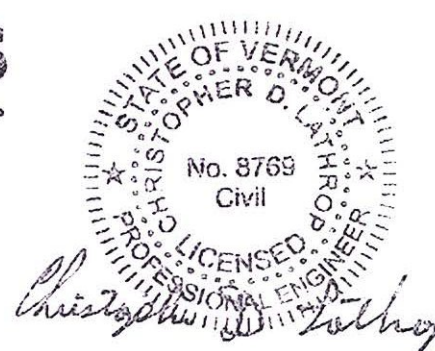
WORK TO BE PERFORMED UNDER THIS PROJECT INCLUDES COLD PLANING, RESURFACING EXISTING HIGHWAY WITH A BITUMINOUS CONCRETE LEVELING COURSE AND A WEARING COURSE, NEW GUARDRAIL, PAVEMENT MARKINGS, AND OTHER HIGHWAY RELATED ITEMS.



CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2011, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON JULY 20, 2011 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

QUALITY ASSURANCE PROGRAM : LEVEL 3	
SURVEYED BY :	N/A
SURVEYED DATE :	N/A
DATUM	
VERTICAL	N/A
HORIZONTAL	N/A

DuBois & King inc.



DIRECTOR OF PROJECT DELIVERY	
APPROVED	DATE 6/6/16
PROJECT MANAGER : MICHAEL J. FOWLER, P.E.	
PROJECT NAME : ST. GEORGE - WILLISTON	
PROJECT NUMBER : STP FPAV(4)	
SHEET 1 OF 18 SHEETS	

TRAFFIC DATA

INDEX OF SHEETS

1	TITLE SHEET
2	INDEX OF SHEETS
3	CONVENTIONAL SYMBOLOGY LEGEND SHEET
4	PROJECT NOTES SHEET
5-6	PROJECT TYPICAL SECTIONS SHEET
7-8	QUANTITY SHEETS
9	ITEM DETAIL SHEET
10-14	PLAN SHEETS
15-16	GUARDRAIL REPLACEMENT GUIDELINES SHEETS
17	CONSTRUCTION APPROACH SIGNING SHEET
18	TRAFFIC CONTROL NOTES SHEET

HIGHWAY SAFETY & DESIGN DETAIL

HSD-400.01 SAFETY EDGE DETAILS 03/29/16
 HSD-621.06 GUARDRAIL TERMINAL END LABEL DETAIL 11/03/15

VAOT STANDARDS

E-193	08/18/95
G-1	11/10/15
G1-D	02/10/14
T-1	04/25/16
T-10	08/06/12
T-17	08/06/12
T-24	08/06/12
T-28	08/06/12
T-29	08/06/12
T-30	08/06/12
T-31	08/06/12
T-35	08/06/12
T-36	08/06/12

VT ROUTE 2A	AADT		DHV		%T		%D		ADTT		ESALS	
	2016	2026	2016	2026	2016	2026	2016	2026	2016	2026	(2016-2026)	(2016-2036)
BEGIN PROJECT TO OLD CREAMERY RD IN WILLISTON	4900	4900	560	560	3.3	4.2	67	67	290	360	588,000	1,323,000
OLD CREAMERY RD TO END OF PROJECT	7100	7200	1100	1100	1.8	2.1	63	63	310	370	933,000	2,172,000

SUPERPAVE BITUMINOUS CONCRETE PAVEMENT MIXTURE DESIGN CRITERIA	
DESIGN LANE/DESIGN LIFE ESALS	393,960
DESIGN NUMBER OF GYRATIONS	50
PERFORMANCE GRADE ASPHALT BINDER:	SEE SUBSECTION 490.03 (b)

PROJECT NAME:	ST. GEORGE-WILLISTON
PROJECT NUMBER:	STP FPAV(4)
FILE NAME: z16v0251dx.dgn	PLOT DATE: 05/16/2016
PROJECT LEADER: C. LATHROP	DRAWN BY: O. DALMER
DESIGNED BY: J. GOODALL	CHECKED BY: C. LATHROP
INDEX OF SHEETS	SHEET 2 OF 18

GENERAL INFORMATION

SYMBOLGY LEGEND NOTE

THE SYMBOLGY ON THIS SHEET IS INTENDED TO COVER STANDARD CONVENTIONAL SYMBOLGY. THE SYMBOLGY IS USED FOR EXISTING & PROPOSED FEATURES WITH HEAVIER LINEWEIGHT, IN COMBINATION WITH PROJECT ANNOTATION, AS NOTED ON PROJECT PLAN SHEETS. THIS LEGEND SHEET COVERS THE BASICS. SYMBOLGY ON PLANS MAY VARY, PLAN ANNOTATIONS AND NOTES SHOULD BE USED TO CLARIFY AS NEEDED.

R. O. W. ABBREVIATIONS (CODES) & SYMBOLS

POINT CODE	DESCRIPTION
CH	CHANNEL EASEMENT
CONST	CONSTRUCTION EASEMENT
CUL	CULVERT EASEMENT
D&C	DISCONNECT & CONNECT
DIT	DITCH EASEMENT
DR	DRAINAGE EASEMENT
DRIVE	DRIVEWAY EASEMENT
EC	EROSION CONTROL
HWY	HIGHWAY EASEMENT
I&M	INSTALL & MAINTAIN EASEMENT
LAND	LANDSCAPE EASEMENT
R&RES	REMOVE & RESET
R&REP	REMOVE & REPLACE
SR	SLOPE RIGHT
UE	UTILITY EASEMENT
(P)	PERMANENT EASEMENT
(T)	TEMPORARY EASEMENT
■	BNDNS BOUND SET
▣	BNDNS BOUND TO BE SET
●	IPNS IRON PIN SET
⊙	IPNS IRON PIN TO BE SET
⊠	CALC EXISTING ROW POINT
○	PROW PROPOSED ROW POINT
[LENGTH]	LENGTH CARRIED ON NEXT SHEET

COMMON TOPOGRAPHIC POINT SYMBOLS

POINT CODE	DESCRIPTION
⊠	APL BOUND APPARENT LOCATION
□	BM BENCHMARK
▣	BND BOUND
▣	CB CATCH BASIN
⊕	COMB COMBINATION POLE
▣	DITHR DROP INLET THROATED DNC
⊕	EL ELECTRIC POWER POLE
○	FPOLE FLAGPOLE
○	GASFIL GAS FILLER
○	GP GUIDE POST
×	GSO GAS SHUT OFF
○	GUY GUY POLE
○	GUYW GUY WIRE
×	GV GATE VALUE
⊕	H TREE HARDWOOD
△	HCTRL CONTROL HORIZONTAL
△	HVCTRL CONTROL HORIZ. & VERTICAL
◇	HYD HYDRANT
●	IP IRON PIN
●	IPIPE IRON PIPE
⊕	LI LIGHT - STREET OR YARD
⊕	MB MAILBOX
○	MH MANHOLE (MH)
●	MM MILE MARKER
●	PM PARKING METER
▣	PMK PROJECT MARKER
POST	POST POST STONE/WOOD
RRSIG	RAILROAD SIGNAL
RRSL	RAILROAD SWITCH LEVER
⊕	S TREE SOFTWOOD
⊕	SAT SATELLITE DISH
⊕	SHRUB SHRUB
⊕	SIGN SIGN
⊕	STUMP STUMP
○	TEL TELEPHONE POLE
○	TIE TIE
TSIGN	SIGN W/DOUBLE POST
VCTRL	CONTROL VERTICAL
○	WELL WELL
×	WSO WATER SHUT OFF

THESE ARE COMMON VAOT SURVEY POINT SYMBOLS FOR EXISTING FEATURES, ALSO USED FOR PROPOSED FEATURES WITH HEAVIER LINEWEIGHT, IN COMBINATION WITH PROPOSED ANNOTATION.

PROPOSED GEOMETRY CODES

CODE	DESCRIPTION
PC	POINT OF CURVATURE
PI	POINT OF INTERSECTION
CC	CENTER OF CURVE
PT	POINT OF TANGENCY
PCC	POINT OF COMPOUND CURVE
PRC	POINT OF REVERSE CURVE
POB	POINT OF BEGINNING
POE	POINT OF ENDING
STA	STATION PREFIX
AH	AHEAD STATION SUFFIX
BK	BACK STATION SUFFIX
D	CURVE DEGREE OF (100FT)
R	CURVE RADIUS OF
T	CURVE TANGENT LENGTH
L	CURVE LENGTH OF
E	CURVE EXTERNAL DISTANCE

UTILITY SYMBOLGY

UNDERGROUND UTILITIES	
— UGU —	UTILITY (GENERIC-UNKNOWN)
— UT —	TELEPHONE
— UE —	ELECTRIC
— UC —	CABLE (TV)
— UEC —	ELECTRIC+CABLE
— UET —	ELECTRIC+TELEPHONE
— UCT —	CABLE+TELEPHONE
— UECT —	ELECTRIC+CABLE+TELEP.
— G —	GAS LINE
— W —	WATER LINE
— S —	SANITARY SEWER (SEPTIC)

ABOVE GROUND UTILITIES (AERIAL)	
— AGU —	UTILITY (GENERIC-UNKNOWN)
— T —	TELEPHONE
— E —	ELECTRIC
— C —	CABLE (TV)
— EC —	ELECTRIC+CABLE
— ET —	ELECTRIC+TELEPHONE
— AER E&T —	ELECTRIC+TELEPHONE
— CT —	CABLE+TELEPHONE
— ECT —	ELECTRIC+CABLE+TELEP.
—	UTILITY POLE GUY WIRE

PROJECT CONSTRUCTION SYMBOLGY	
— — — — — CZ — — — — —	CLEAR ZONE
—————	PLAN LAYOUT MATCHLINE

PROJECT CONSTRUCTION FEATURES	
▲ —▲—▲—▲—▲	TOP OF CUT SLOPE
⊙ —⊙—⊙—⊙—⊙	TOE OF FILL SLOPE
⊕ ⊕ ⊕ ⊕ ⊕ ⊕	STONE FILL
— — — — —	BOTTOM OF DITCH
== == == == ==	CULVERT PROPOSED
-----	STRUCTURE SUBSURFACE
PDF — PDF	PROJECT DEMARCATION FENCE
BF — — — — — BF	BARRIER FENCE
XXXXXXXXXXXXXXXXXXXX	TREE PROTECTION ZONE (TPZ)
//// //// //// ////	STRIPING LINE REMOVAL
~~~~~	SHEET PILES

CONVENTIONAL BOUNDARY SYMBOLGY	
—————	TOWN BOUNDARY LINE
—————	COUNTY BOUNDARY LINE
—————	STATE BOUNDARY LINE
———	PROPOSED STATE R.O.W. (LIMITED ACCESS)
———	PROPOSED STATE R.O.W.
———	STATE ROW (LIMITED ACCESS)
———	STATE ROW
———	TOWN ROW
-----	PERMANENT EASEMENT LINE (P)
-----	TEMPORARY EASEMENT LINE (T)
-----	SURVEY LINE
— P — — P —	PROPERTY LINE (P/L)
▲ — SR — SR — SR —	SLOPE RIGHTS
6f — — — — — 6f	6F PROPERTY BOUNDARY
4f — — — — — 4f	4F PROPERTY BOUNDARY
HAZ — — — — — HAZ	HAZARDOUS WASTE

**EPSC LAYOUT PLAN SYMBOLGY**

EPSC MEASURES	
ONNOONNOONNO	FILTER CURTAIN
— — — — —	SILT FENCE
— X — X — X — X —	SILT FENCE WOVEN WIRE
— — — — —	CHECK DAM
▣	DISTURBED AREAS REQUIRING RE-VEGETATION
▣	EROSION MATTING

SEE EPSC DETAIL SHEETS FOR ADDITIONAL SYMBOLGY

ENVIRONMENTAL RESOURCES	
— — — — —	WETLAND BOUNDARY
— — — — —	RIPARIAN BUFFER ZONE
— — — — —	WETLAND BUFFER ZONE
-----	SOIL TYPE BOUNDARY
— T&E —	THREATENED & ENDANGERED SPECIES
HAZ — HAZ	HAZARDOUS WASTE AREA
— AG —	AGRICULTURAL LAND
— HABITAT —	FISH & WILDLIFE HABITAT
— FLOOD PLAIN —	FLOOD PLAIN
— OHW —	ORDINARY HIGH WATER (OHW)
— — — — —	STORM WATER
-----	USDA FOREST SERVICE LANDS
— — — — —	WILDLIFE HABITAT SUIT/CONN

ARCHEOLOGICAL & HISTORIC	
— ARCH —	ARCHEOLOGICAL BOUNDARY
— HISTORIC DIST —	HISTORIC DISTRICT BOUNDARY
— HISTORIC —	HISTORIC AREA
(H)	HISTORIC STRUCTURE

CONVENTIONAL TOPOGRAPHIC SYMBOLGY	
-----	EXISTING FEATURES
-----	ROAD EDGE PAVEMENT
-----	ROAD EDGE GRAVEL
-----	DRIVEWAY EDGE
-----	DITCH
-----	FOUNDATION
— X — X — X — X —	FENCE (EXISTING)
□ — □ — □ — □ —	FENCE WOOD POST
○ — ○ — ○ — ○ —	FENCE STEEL POST
-----	GARDEN
-----	ROAD GUARDRAIL
	RAILROAD TRACKS
-----	CULVERT (EXISTING)
-----	STONE WALL
-----	WALL
-----	WOOD LINE
-----	BRUSH LINE
-----	HEDGE
-----	BODY OF WATER EDGE
-----	LEDGE EXPOSED

PROJECT NAME: ST. GEORGE-WILLISTON  
 PROJECT NUMBER: STP FPAV(4)  
 FILE NAME: z16v0251dx.dgn PLOT DATE: 05/16/2016  
 PROJECT LEADER: C. LATHROP DRAWN BY: O. DALMER  
 DESIGNED BY: J. GOODALL CHECKED BY: C. LATHROP  
 CONVENTIONAL SYMBOLGY LEGEND SHEET SHEET 3 OF 18

**PROJECT PAVING LIMITS**

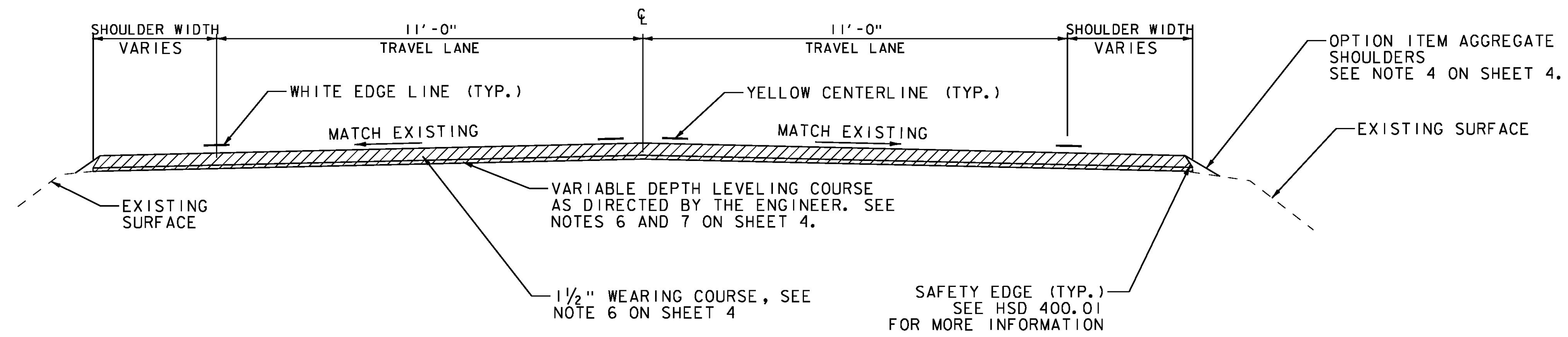
TOWN AND ROUTE	BEGIN STATION	END STATION	LANE TYPICAL	WEARING DEPTH	LEVELING DEPTH	NOTES
RT 2A						
ST. GEORGE						
	0.018	0.100	6'-11'-11'-6'	1 1/2"	VARIES	LEVEL AND OVERLAY
	0.100	1.982	3'-11'-11'-3'	1 1/2"	VARIES	LEVEL AND OVERLAY
WILLISTON						
	W 0.000	W 2.568	3'-11'-11'-3'	1 1/2"	VARIES	LEVEL AND OVERLAY
	W 2.568	W 2.618	VARIES-11'-11'-VARIES	1 1/2"	VARIES	LEVEL AND OVERLAY
	W 2.618	W 2.744	4'-11'-11'-4'	1 1/2"	VARIES	LEVEL AND OVERLAY
	W 2.744	W 2.763	VARIES-11'-11'-VARIES	1 1/2"	VARIES	LEVEL AND OVERLAY
	W 2.763	W 2.804	(6'-7.5') - (11'-14') - (11'-11.5') - (0'-11.5') - (8'-9')	1 1/2"	VARIES	LEVEL AND OVERLAY

**NOTES:**

1. COLD PLANING SHALL BE COMPLETED ACCORDING TO THE TRANSITION DETAILS. THE COLD PLANING AND PAVING SHALL MATCH THE EXISTING CONDITIONS AT THE BEGINNING AND END OF THE CONSTRUCTION AREAS BY THE USE OF A BUTT JOINT. SEE DETAILS ON PROJECT TYPICAL SHEET 1.
2. ALL COLD PLANED AND EXISTING SURFACES SHALL HAVE SURFACE PREPARATION BEFORE PAVING, CONSISTING OF POTHOLE PATCHING AND PATCHING OF ALL CRACKS THAT ARE AT LEAST 1" IN WIDTH. THIS WILL BE PAID FOR UNDER ITEM 900.680 "SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT SURFACE PREPARATION, TYPE 1)".
3. EXISTING SHOULDER MATERIAL DEEMED UNSUITABLE BY THE ENGINEER SHALL BE EXCAVATED TO A DEPTH OF THREE INCHES OR AS DIRECTED BY THE ENGINEER. EXCAVATION SHALL BE PAID UNDER ITEM 608.25 "ALL PURPOSE EXCAVATOR RENTAL, TYPE 1" AND ITEM 608.37 "TRUCK RENTAL". MATERIAL REMOVED SHALL BE REPLACED WITH ITEM 301.28 "SUBBASE OF CRUSHED GRAVEL, FINE GRADED" AS DIRECTED BY THE ENGINEER. EXCAVATED MATERIAL SHALL BE SPREAD ON THE ADJACENT SLOPES, OR REMOVED FROM THE PROJECT AS DIRECTED BY THE ENGINEER.
4. ALL EDGES OF PAVEMENT SHALL BE BACKED UP TO FULL HEIGHT WITH AGGREGATE SHOULDER MATERIAL AS DIRECTED BY THE ENGINEER AND WILL BE PAID UNDER OPTION ITEM 402.12 "AGGREGATE SHOULDERS" OR ITEM 402.13 "AGGREGATE SHOULDERS, RAP".
5. EMULSIFIED ASPHALT SHALL BE APPLIED ON EXISTING PAVEMENT SURFACES, BETWEEN ALL COURSES OF PAVEMENT AND ON COLD PLANE SURFACES. ALL COLD PLANE SURFACES SHALL HAVE AN APPLICATION RATE OF 0.08 GAL/SY. EMULSIFIED ASPHALT SHALL BE APPLIED ON ALL OTHER PAVED SURFACES AT THE RATE OF 0.025 TO 0.040 GAL/SY PAID UNDER OPTION ITEM 404.65 "EMULSIFIED ASPHALT (RS-1)" OR ITEM 900.683 "SPECIAL PROVISION (EMULSIFIED ASPHALT) (RS-1H OR CRS-1H)".
6. THE PAVEMENT WEARING AND LEVELING COURSES SHALL BE ITEM 406.27 "MEDIUM DUTY BITUMINOUS CONCRETE PAVEMENT" TYPE IV OR ITEM 490.30 "SUPERPAVE BITUMINOUS CONCRETE PAVEMENT" TYPE IVS. ALL ASPHALT CEMENT USED IN THE BITUMINOUS CONCRETE PAVEMENT SHALL BE AS SPECIFIED IN SUBSECTION 406.03 (b) OR 490.03 (b).
7. FOR ESTIMATING PURPOSES 3/4" LEVELING COURSE HAS BEEN QUANTIFIED FOR THE PROJECT. THE LEVELING COURSE DEPTH IS MEANT TO CORRECT PROFILE DEFICIENCIES PRIOR TO THE WEARING COURSE BEING PLACED. THE ENGINEER WILL WORK IN CONJUNCTION WITH VTRANS PAVEMENT DESIGN STAFF TO DETERMINE THE ACTUAL LEVELING COURSE DEPTH.
8. ALL PAVED AND GRAVEL RESIDENTIAL AND COMMERCIAL DRIVES, AND ALL FIELD AND WOODS DRIVES SHALL RECEIVE A TWO FOOT PAVED APRON UNLESS OTHERWISE SHOWN ON THE PLANS OR DIRECTED BY THE ENGINEER. ANY EXCAVATION OR REGRADING SHALL BE INCIDENTAL TO ITEM 406.27 "MEDIUM DUTY BITUMINOUS CONCRETE PAVEMENT" OR ITEM 490.30 "SUPERPAVE BITUMINOUS CONCRETE PAVEMENT". THE NEW BITUMINOUS SURFACE WILL BE PAID FOR UNDER ITEM 406.27 "MEDIUM DUTY BITUMINOUS CONCRETE PAVEMENT" TYPE IV OR ITEM 490.30 "SUPERPAVE BITUMINOUS CONCRETE PAVEMENT" TYPE IVS.
9. BITUMINOUS CONCRETE PAVEMENT TOLERANCE = +/- 1/4 INCH (TOTAL THICKNESS, EXCLUDING LEVELING).
10. EDGES OF PAVEMENT SHALL INCLUDE A SAFETY EDGE AS SHOWN ON HSD-400.01 SAFETY EDGE DETAILS.
11. ANY D1'S, CROSS CULVERTS OR OTHER DRAINAGE FEATURES DAMAGED BY CONTRACTOR OPERATIONS SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER AT NO ADDITIONAL COST TO THE STATE.
12. ESTIMATED QUANTITIES OF ITEMS 608.15 "POWER GRADER RENTAL", 608.25 "ALL PURPOSE EXCAVATOR RENTAL, TYPE 1", 608.37 "TRUCK RENTAL", AND 608.40 "LOADER RENTAL, TYPE 1" HAVE BEEN INCLUDED FOR THE PROVISION OF CONSTRUCTING GUARDRAIL END SECTIONS WITH EXCAVATED DITCHING MATERIAL AND THE REMOVAL OF BUILT UP EXCESS SHOULDER MATERIAL IN NON-GUARDRAIL LOCATIONS.
13. AN ESTIMATED QUANTITY OF ITEM 203.30 "EARTH BORROW" HAS BEEN INCLUDED FOR USE WITH THE GUARDRAIL END SECTIONS. 25 CY OF ITEM 203.30 "EARTH BORROW" HAS BEEN ESTIMATED FOR EACH NEW END SECTION. GUARDRAIL END SECTIONS SHALL BE CAPPED WITH AN ESTIMATED 3 INCH DEPTH OF ITEM 651.35 "TOPSOIL" UNLESS OTHERWISE DIRECTED BY THE ENGINEER. THE QUANTITIES INCLUDED REFLECT 5 CY OF ITEM 651.35 "TOPSOIL" FOR EACH NEW GUARDRAIL END SECTION. ITEM 653.20 "TEMPORARY EROSION MATTING" SHALL BE PLACED ON SLOPES GREATER THAN 1:6 CREATED BY THE GUARDRAIL END SECTIONS. THE QUANTITIES INCLUDED REFLECT 25 SY OF ITEM 653.20 "TEMPORARY EROSION MATTING" FOR EACH NEW GUARDRAIL END SECTION. PRIOR TO THE PLACEMENT OF TEMPORARY EROSION MATTING, THE AREA SHALL BE TOPSOILED AND SEEDED USING ITEM 651.35 "TOPSOIL" AND ITEM 651.15 "SEED".
14. STEEL BEAM GUARDRAIL WITH STEEL POSTS SHALL BE USED ON THIS PROJECT.

PROJECT NAME:	ST. GEORGE-WILLISTON
PROJECT NUMBER:	STP FPAV(4)
FILE NAME: z16v025typ.dgn	PLOT DATE: 05/16/2016
PROJECT LEADER: C. LATHROP	DRAWN BY: O. DALMER
DESIGNED BY: J. GOODALL	CHECKED BY: C. LATHROP
PROJECT NOTES SHEET	SHEET 4 OF 18

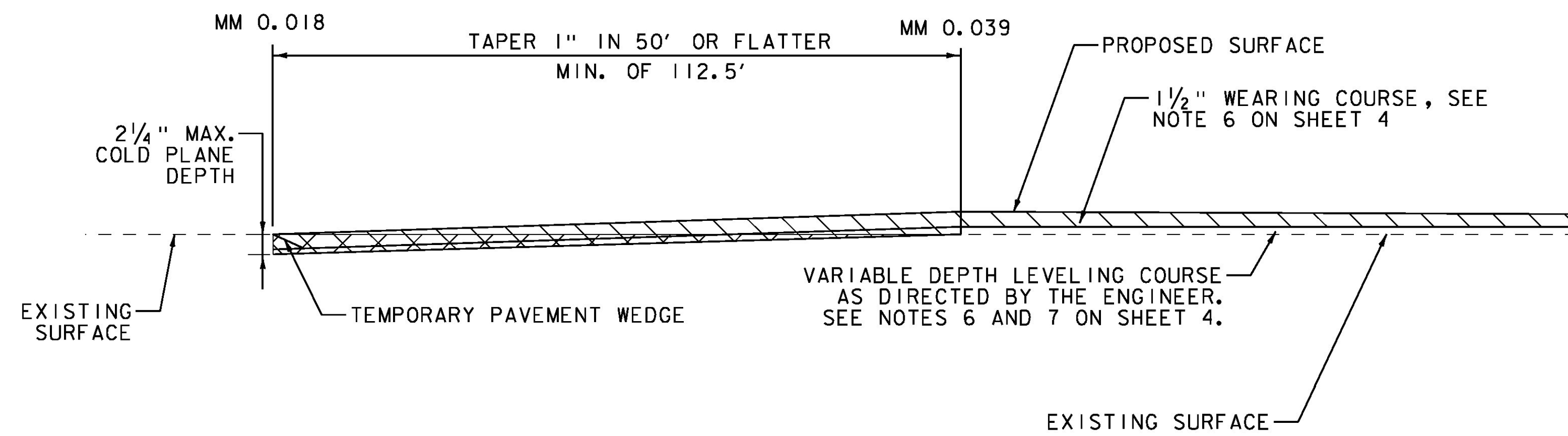
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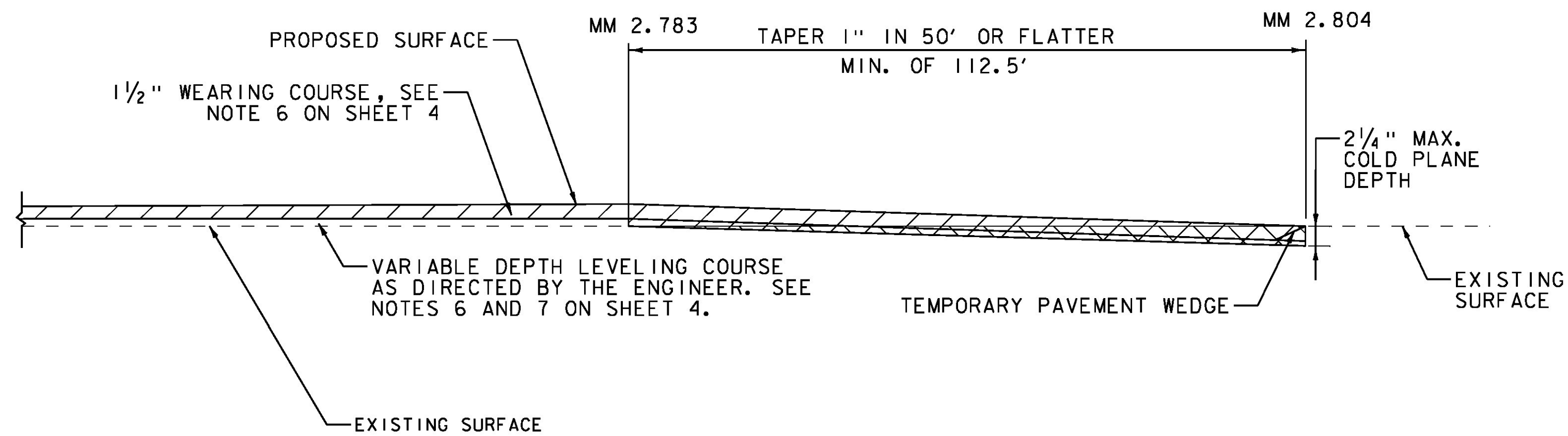
**LEVEL & OVERLAY TYPICAL SECTION**

ST. GEORGE  
MM 0.039 TO MM 1.982

WILLISTON  
MM 0.000 TO MM 2.783



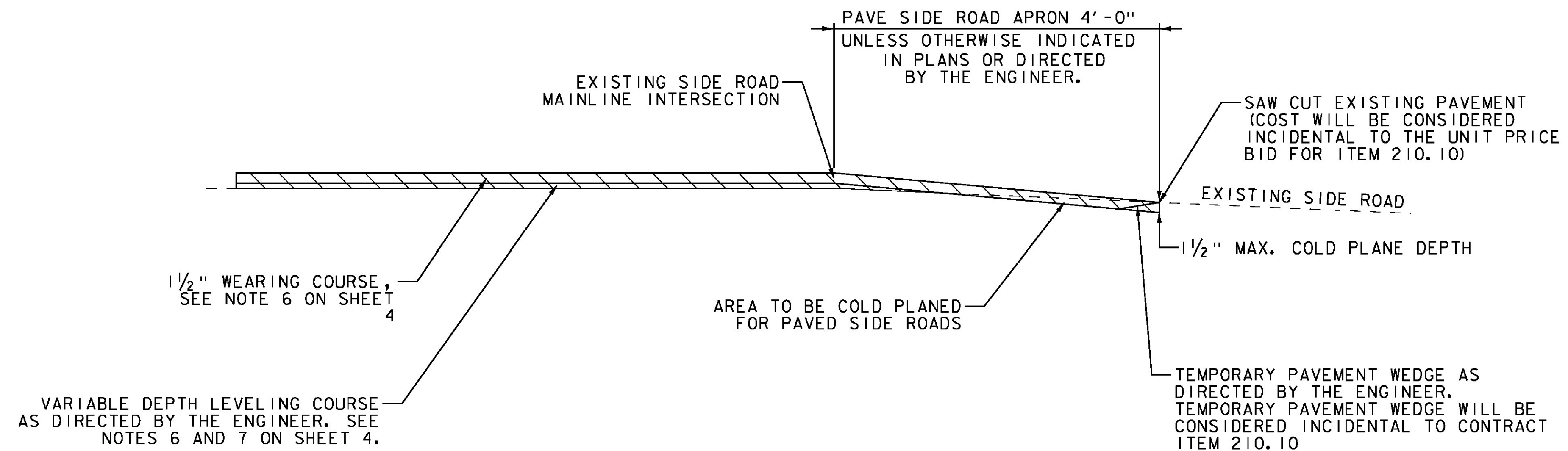
**BEGIN PROJECT TRANSITION DETAIL  
EXISTING PAVEMENT TO LEVEL & OVERLAY**



**END PROJECT TRANSITION DETAIL  
LEVEL & OVERLAY TO EXISTING PAVEMENT**

PROJECT NAME:	ST. GEORGE-WILLISTON
PROJECT NUMBER:	STP FPAV(4)
FILE NAME: z16v025typ.dgn	PLOT DATE: 05/16/2016
PROJECT LEADER: C. LATHROP	DRAWN BY: O. DALMER
DESIGNED BY: J. GOODALL	CHECKED BY: C. LATHROP
PROJECT TYPICAL SECTIONS SHEET 1	SHEET 5 OF 18

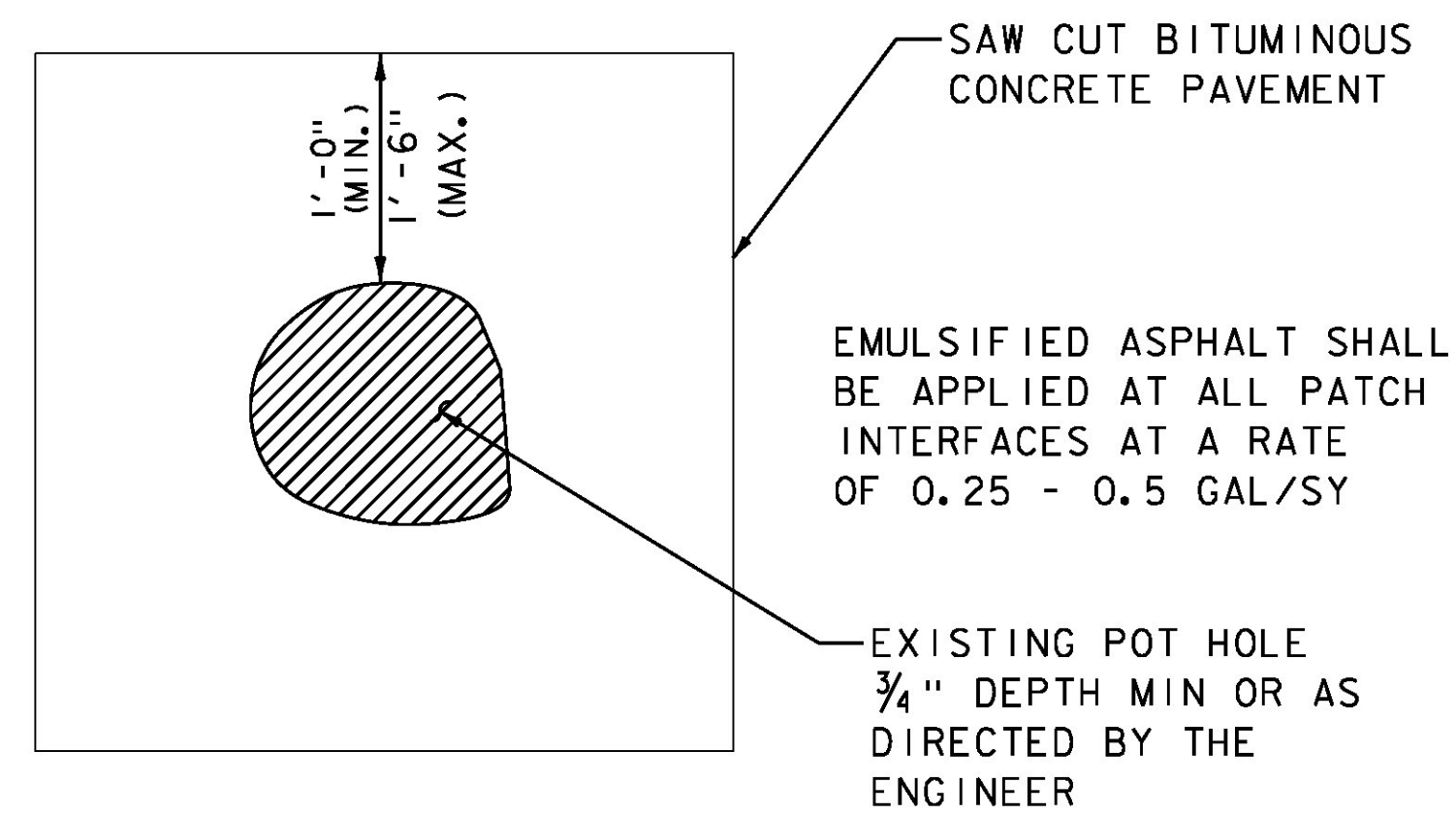
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**TRANSITION AREA FOR SIDE ROADS (LEVEL & OVERLAY)**

FULL WIDTH OF TOWN HIGHWAY

MM W 2.116 TH#3 - APRON SHALL BE 25' SEE PLAN SHEET 4



**NOTE:**

- EMULSIFIED ASPHALT SHALL BE APPLIED AT ALL PATCH INTERFACES AT A RATE OF 0.25 - 0.50 GAL/SY. EMULSIFIED ASPHALT SHALL MEET THE REQUIREMENTS OF SECTION 404 AND WILL BE CONSIDERED INCIDENTAL TO ITEM 900.680 "SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT SURFACE PREPARATION, TYPE 1)".
- ALL WORK ASSOCIATED WITH POT HOLE REPAIR WILL BE PAID UNDER ITEM 900.680 "SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT SURFACE PREPARATION, TYPE 1)".

**TYPICAL - POT HOLE REPAIR**

PROJECT NAME:	ST. GEORGE-WILLISTON
PROJECT NUMBER:	STP FPAV(4)
FILE NAME: z16v025typ.dgn	PLOT DATE: 05/16/2016
PROJECT LEADER: C. LATHROP	DRAWN BY: O. DALMER
DESIGNED BY: J. GOODALL	CHECKED BY: C. LATHROP
PROJECT TYPICAL SECTIONS SHEET 2	SHEET 6 OF 18

NOT TO SCALE

# QUANTITY SHEET 1

SUMMARY OF ESTIMATED QUANTITIES								TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES				
						ROADWAY	FULL C.E.	ROADWAY (ALTERNATE A)	ROADWAY (ALTERNATE B)	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
						100				100		CY	EARTH BORROW	203.30	EST.			
						1				1		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22	-			
						1600				1600		SY	COLD PLANING, BITUMINOUS PAVEMENT	210.10	22			
						500				500		TON	SUBBASE OF CRUSHED GRAVEL, FINE GRADED	301.28	EST.			
													BEGIN OPTION AA					
						840				840		TON	AGGREGATE SHOULDERS	402.12	20			
						840				840		TON	AGGREGATE SHOULDERS, RAP	402.13	20			
													END OPTION AA					
													BEGIN OPTION BB					
						540				540		CWT	EMULSIFIED ASPHALT (RS-1)	404.65	5			
						540				540		CWT	SPECIAL PROVISION (EMULSIFIED ASPHALT) (RS-1H OR CRS-1H)	900.683	5			
													END OPTION BB					
						1				1		LU	PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)	406.50	-			
						40				40		HR	POWER GRADER RENTAL	608.15	EST.			
						120				120		HR	ALL PURPOSE EXCAVATOR RENTAL, TYPE I	608.25	EST.			
						40				40		HR	POWER BROOM RENTAL, TYPE I	608.30	EST.			
						70				70		HR	POWER BROOM RENTAL, TYPE II	608.31	EST.			
						240				240		HR	TRUCK RENTAL	608.37	EST.			
						30				30		HR	LOADER RENTAL, TYPE I	608.40	EST.			
						175				175		LF	STEEL BEAM GUARDRAIL, GALVANIZED	621.20	17			
						4				4		EACH	ANCHOR FOR STEEL BEAM RAIL	621.60	-			
						2				2		EACH	REPLACE GUARDRAIL BEAM UNIT	621.77	-			
						350				350		LF	ADJUST HEIGHT OF GUARDRAIL	621.79	-			
						150				150		LF	REMOVAL AND DISPOSAL OF GUARDRAIL	621.80	-			
						900				900		HR	UNIFORMED TRAFFIC OFFICERS	630.10	EST.			
						2400				2400		HR	FLAGGERS	630.15	EST.			
							1			1		LS	TESTING EQUIPMENT, BITUMINOUS	631.17	-			
						1				1		LS	MOBILIZATION/DEMOBILIZATION	635.11	-			
						1				1		LS	TRAFFIC CONTROL	641.10	-			
						4				4		EACH	PORTABLE CHANGEABLE MESSAGE SIGN	641.15	-			
						51000				51000		LF	4 INCH WHITE LINE, WATERBORNE PAINT	646.201	575			
						49500				49500		LF	4 INCH YELLOW LINE, WATERBORNE PAINT	646.2111	516			
						40				40		LF	24 INCH STOP BAR, WATERBORNE PAINT	646.261	2			
						51				51		EACH	LETTER OR SYMBOL, WATERBORNE PAINT	646.301	-			
						51000				51000		LF	TEMPORARY 4 INCH WHITE LINE, PAINT	646.602	575			
						49500				49500		LF	TEMPORARY 4 INCH YELLOW LINE, PAINT	646.612	516			
						40				40		LF	TEMPORARY 24 INCH STOP BAR, PAINT	646.682	2			
						51				51		EACH	TEMPORARY LETTER OR SYMBOL, PAINT	646.692	-			
						10200				10200		EACH	LINE STRIPING TARGETS	646.76	252			
						25				25		LB	SEED	651.15	EST.			

PROJECT NAME: ST. GEORGE-WILLISTON  
PROJECT NUMBER: STP FPAV(4)  
FILE NAME: z16v025qnty.dgn PLOT DATE: 05/16/2016  
PROJECT LEADER: C. LATHROP DRAWN BY: O. DALMER  
DESIGNED BY: O. DALMER CHECKED BY: C. LATHROP  
QUANTITY SHEET 1 SHEET 7 OF 18

# QUANTITY SHEET 2

SUMMARY OF ESTIMATED QUANTITIES							TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES				
					ROADWAY	FULL C.E.	ROADWAY (ALTERNATE A)	ROADWAY (ALTERNATE B)	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
					25				25		LB	FERTILIZER	651.18	EST.			TOPSOIL
					1				1		TON	AGRICULTURAL LIMESTONE	651.20	0.95	86	CY	PROJECT LENGTH
					1				1		TON	HAY MULCH	651.25	0.95	20	CY	ITEM DETAIL SHEET
					110				110		CY	TOPSOIL	651.35	4	4	CY	ROUNDING
					100				100		SY	TEMPORARY EROSION MATTING	653.20	-	110	CY	TOTAL
					4				4		EACH	DELINEATOR WITH STEEL POST	676.10	-			
					4				4		EACH	REMOVAL OF EXISTING DELINEATOR	676.12	-			
					1				1		LU	PRICE ADJUSTMENT, FUEL (N.A.B.I.)	690.50	-			
					100				100		TON	SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT SURFACE PREPARATION, TYPE 1)	900.680	EST.			
												BEGIN ALTERNATE ZA1					
							11100		11100		TON	MEDIUM DUTY BITUMINOUS CONCRETE PAVEMENT	406.27	224			
							1		1		LU	AIR VOIDS PAY ADJUSTMENT (N.A.B.I.)	406.28	-			
												END ALTERNATE ZA1					
												BEGIN ALTERNATE ZA2					
							11100		11100		TON	SUPERPAVE BITUMINOUS CONCRETE PAVEMENT	490.30	224			
							1		1		LU	AIR VOIDS PAY ADJUSTMENT (N.A.B.I.)	490.31	-			
												END ALTERNATE ZA2					

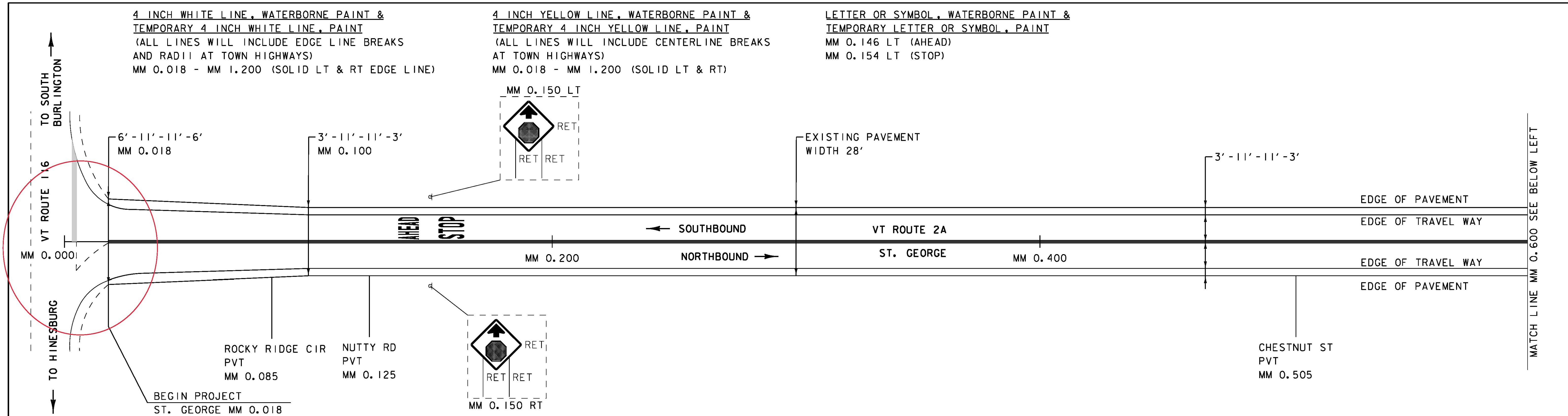
PROJECT NAME: ST. GEORGE-WILLISTON  
 PROJECT NUMBER: STP FPAV(4)  
 FILE NAME: z16v025qnty.dgn PLOT DATE: 05/16/2016  
 PROJECT LEADER: C. LATHROP DRAWN BY: O. DALMER  
 DESIGNED BY: O. DALMER CHECKED BY: C. LATHROP  
 QUANTITY SHEET 2 SHEET 8 OF 18

**STATE OF VERMONT  
AGENCY OF TRANSPORTATION**

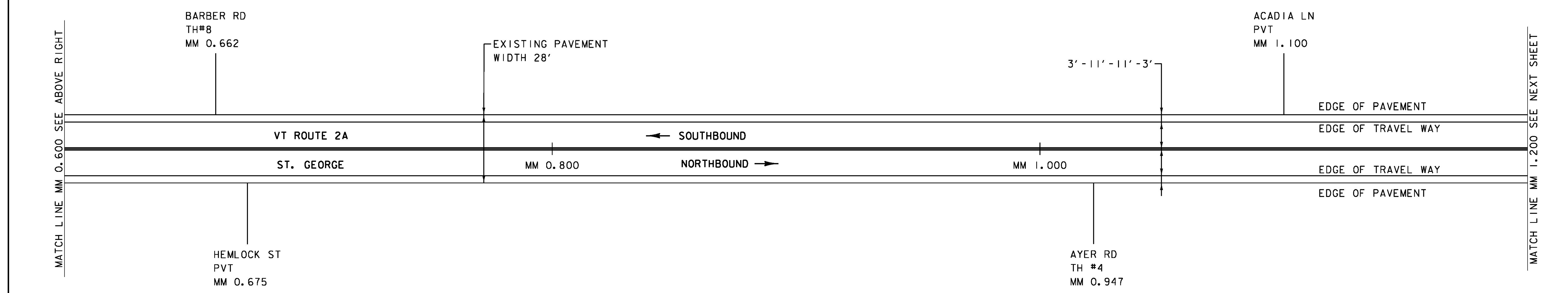
**ITEM DETAIL SHEET**

BEGIN STATION	END STATION	POS.	203.30	402.12 & 402.13	621.20	621.60	621.77	621.79	621.80	651.35	653.20	676.10	676.12	REMARKS
			EARTH BORROW	AGG. SHOULD. (OPTION ITEM)	STEEL BEAM G. R. GALV.	ANCHOR FOR S. B. G. R.	REPLACE G. R. BEAM UNIT	ADJUST HEIGHT OF G. R.	REMOVE & DISP. OF G. R.	TOPSOIL	TEMP. EROSION MATTING	DEL. INE. WITH STEEL POSTS	REMOVAL OF EXIST. DEL. INE.	
			CY	TON	LF	EACH	EACH	EACH	LF	CY	SY	EACH	EACH	
WILLISTON				820										
W 0.393	W 0.423	RT						160						
W 0.398	W 0.434	LT						190						
W 0.503	W 0.538	LT	50		79	2	2		75	10	50	2	2	SEE VTRANS STD G1-D FOR END SECTION DETAILS
														GUARDRAIL POSTS AND PANELS PROVIDED FOR USE AT ENGINEERS DISCRETION
W 0.508	W 0.534	RT	50		79	2			75	10	50	2	2	SEE VTRANS STD G1-D FOR END SECTION DETAILS
SUBTOTAL			100	820	158	4	2	350	150	20	100	4	4	
ROUNDING			-	20	17	-	-	-	-	-	-	-	-	
TOTAL			100	840	175	4	2	350	150	20	100	4	4	

PROJECT NAME: ST. GEORGE-WILLISTON  
PROJECT NUMBER: STP FPAV(4)  
FILE NAME: z16v0251ds.dgn PLOT DATE: 05/16/2016  
PROJECT LEADER: C. LATHROP DRAWN BY: O. DALMER  
DESIGNED BY: J. GOODALL CHECKED BY: C. LATHROP  
ITEM DETAIL SHEET SHEET 9 OF 18



Refreshed existing paint lines/symbols/lettering due to poor visibility and at request of district.



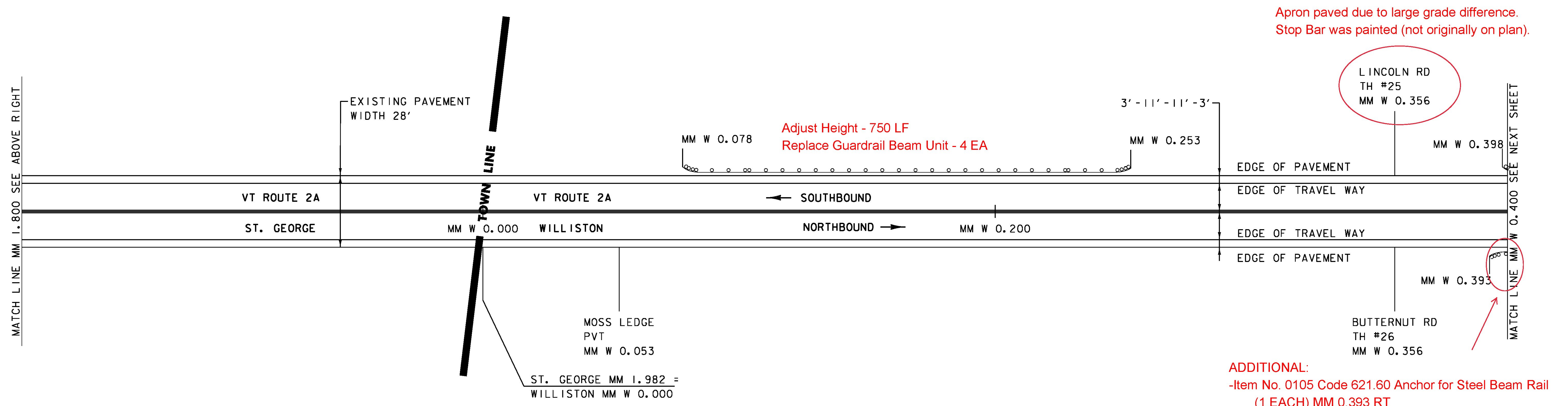
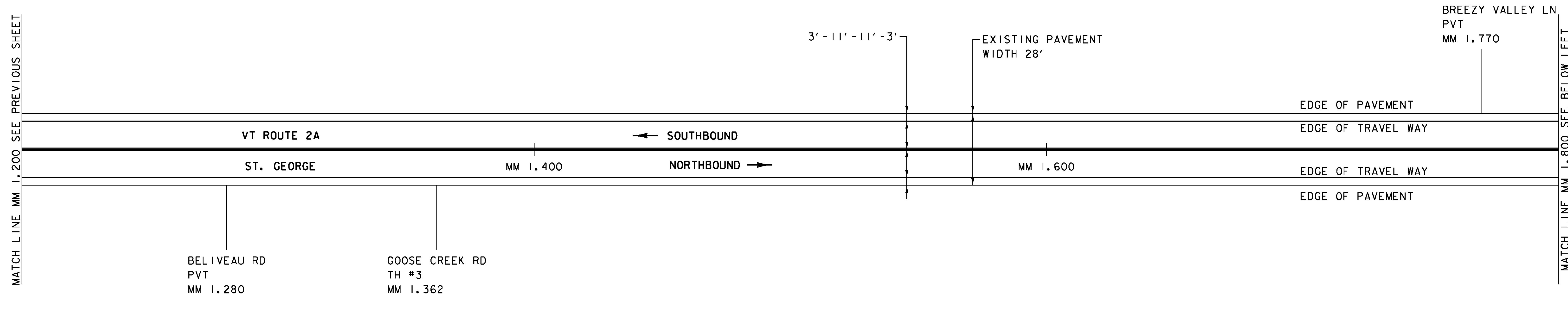
PROJECT NAME:	ST. GEORGE-WILLISTON
PROJECT NUMBER:	STP FPAV(4)
FILE NAME: z16v025bdr.dgn	PLOT DATE: 05/16/2016
PROJECT LEADER: C. LATHROP	DRAWN BY: J. GOODALL
DESIGNED BY: J. GOODALL	CHECKED BY: C. LATHROP
PLAN SHEET 1	SHEET 10 OF 18

NOT TO SCALE

ADJUST HEIGHT OF GUARDRAIL  
 MM W 0.393 - MM W 0.400 RT  
 MM W 0.398 - MM W 0.400 LT

4 INCH WHITE LINE, WATERBORNE PAINT &  
 TEMPORARY 4 INCH WHITE LINE, PAINT  
 (ALL LINES WILL INCLUDE EDGE LINE BREAKS  
 AND RADII AT TOWN HIGHWAYS)  
 MM 1.200 - MM 1.982 (SOLID LT & RT EDGE LINE)  
 MM W 0.000 - MM W 0.400 (SOLID LT & RT EDGE LINE)

4 INCH YELLOW LINE, WATERBORNE PAINT &  
 TEMPORARY 4 INCH YELLOW LINE, PAINT  
 (ALL LINES WILL INCLUDE CENTERLINE BREAKS  
 AT TOWN HIGHWAYS)  
 MM 1.200 - MM 1.982 (SOLID LT & RT)  
 MM W 0.000 - MM W 0.400 (SOLID LT & RT)



Apron paved due to large grade difference.  
 Stop Bar was painted (not originally on plan).

- ADDITIONAL:**
- Item No. 0105 Code 621.60 Anchor for Steel Beam Rail (1 EACH) MM 0.393 RT
  - Item No. 0225 Code 676.10 Delineator with Steel Post (1 EACH) MM 0.393 RT
  - Item No. 0120 Code 621.80 Removal and Disposal of Guardrail Williston MM 0.393-0.400 RT and MM 0.416- 0.423 RT = 2 ends x 37.5' = 75 LF  
 TOTAL = 75 LF

PROJECT NAME:	ST. GEORGE-WILLISTON
PROJECT NUMBER:	STP FPAV(4)
FILE NAME: z16v025bdr.dgn	PLOT DATE: 05/16/2016
PROJECT LEADER: C. LATHROP	DRAWN BY: J. GOODALL
DESIGNED BY: J. GOODALL	CHECKED BY: C. LATHROP
PLAN SHEET 2	SHEET II OF 18

NOT TO SCALE

STEEL BEAM GUARDRAIL, GALVANIZED  
 MM W 0.503 - MM W 0.510 LT  
 MM W 0.508 - MM W 0.515 RT  
 MM W 0.527 - MM W 0.534 RT  
 MM W 0.531 - MM W 0.538 LT

REMOVAL AND DISPOSAL OF GUARDRAIL  
 MM W 0.503 - MM W 0.510 LT  
 MM W 0.508 - MM W 0.515 RT  
 MM W 0.527 - MM W 0.534 RT  
 MM W 0.531 - MM W 0.538 LT

4 INCH WHITE LINE, WATERBORNE PAINT &  
 TEMPORARY 4 INCH WHITE LINE, PAINT  
 (ALL LINES WILL INCLUDE EDGE LINE BREAKS  
 AND RADII AT TOWN HIGHWAYS  
 MM W 0.400 - MM W 1.600 (SOLID LT & RT EDGE LINE)

4 INCH YELLOW LINE, WATERBORNE PAINT &  
 TEMPORARY 4 INCH YELLOW LINE, PAINT  
 (ALL LINES WILL INCLUDE CENTERLINE BREAKS  
 AT TOWN HIGHWAYS)  
 MM W 0.400 - MM W 0.795 (SOLID LT & RT)  
 MM W 0.795 - MM W 0.920 (SOLID LT, DASHED RT)  
 MM W 0.920 - MM W 0.950 (DASHED RT)  
 MM W 0.950 - MM W 1.100 (DASHED LT, SOLID RT)  
 MM W 1.100 - MM W 1.600 (SOLID LT & RT)

LETTER OR SYMBOL, WATERBORNE PAINT &  
 TEMPORARY LETTER OR SYMBOL, PAINT  
 MM W 0.500 RT (SCHOOL)  
 MM W 0.508 RT (AHEAD)  
 MM W 0.759 LT (AHEAD)  
 MM W 0.767 LT (SCHOOL)

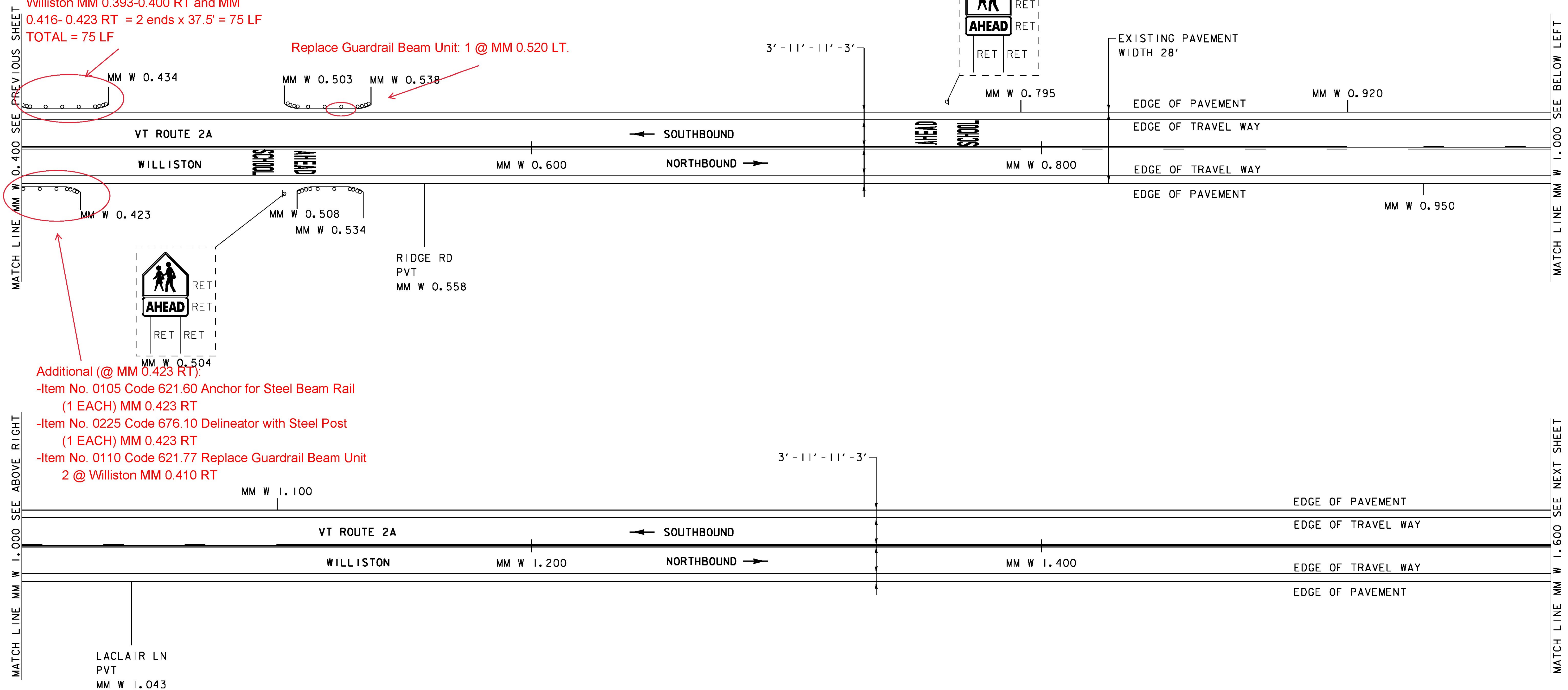
ANCHOR FOR STEEL BEAM GUARDRAIL  
 MM W 0.503 LT  
 MM W 0.508 RT  
 MM W 0.534 RT  
 MM W 0.538 LT

ADJUST HEIGHT OF GUARDRAIL  
 MM W 0.400 - MM W 0.423 RT  
 MM W 0.400 - MM W 0.434 LT

ADJUST HEIGHT - FIELD MEASURED:  
 MM W 0.398 - 0.434 LT = 112.5+175 = 287.5 LF  
 MM W 0.393 - 0.423 RT = 100 LF  
 MM W 0.503 - 0.538 LT = 100 LF  
 MM W 0.508 - 0.534 RT = 100 LF

Additional Item No. 0120 Code 621.80  
 Removal and Disposal of Guardrail:  
 Williston MM 0.393-0.400 RT and MM  
 0.416- 0.423 RT = 2 ends x 37.5' = 75 LF  
 TOTAL = 75 LF

Replace Guardrail Beam Unit: 1 @ MM 0.520 LT.



Additional (@ MM 0.423 RT):  
 -Item No. 0105 Code 621.60 Anchor for Steel Beam Rail  
 (1 EACH) MM 0.423 RT  
 -Item No. 0225 Code 676.10 Delineator with Steel Post  
 (1 EACH) MM 0.423 RT  
 -Item No. 0110 Code 621.77 Replace Guardrail Beam Unit  
 2 @ Williston MM 0.410 RT

NOT TO SCALE

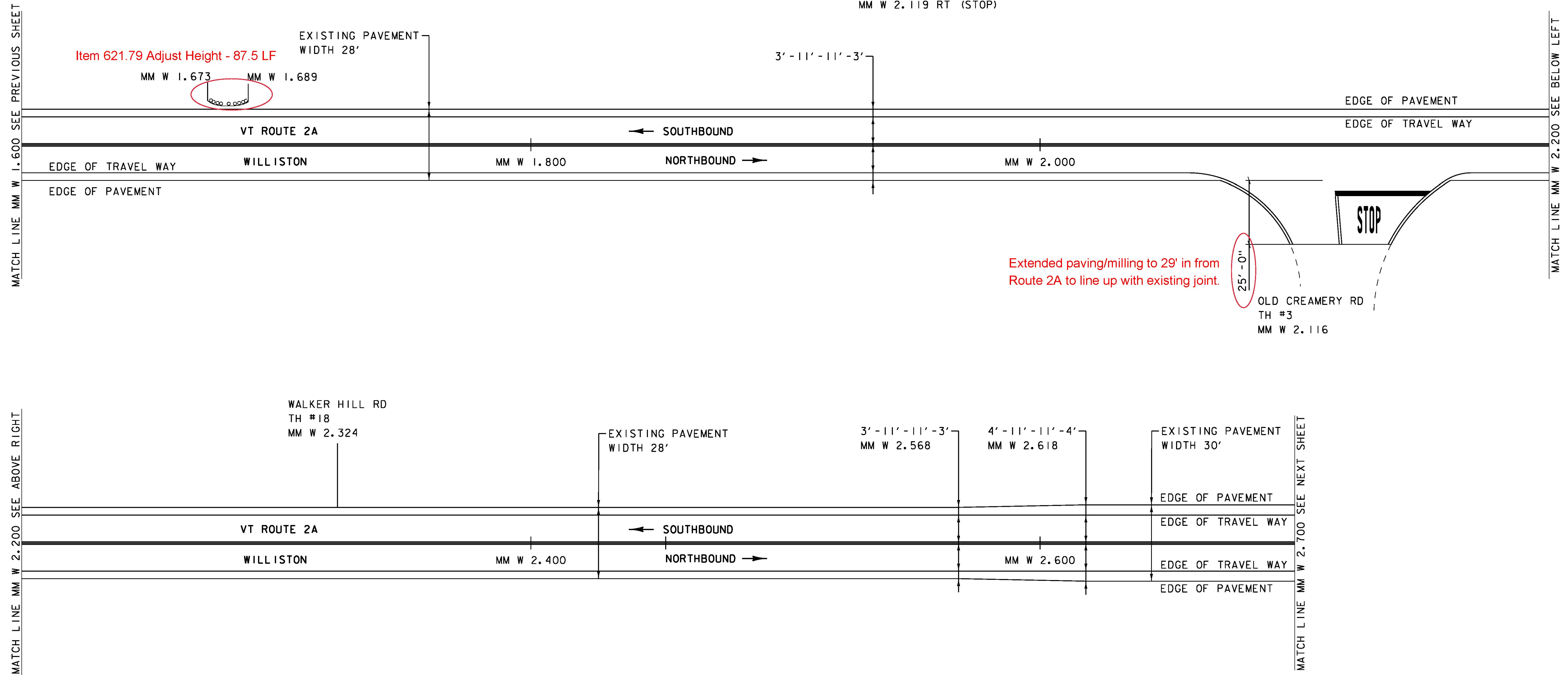
PROJECT NAME:	ST. GEORGE-WILLISTON
PROJECT NUMBER:	STP FPAV(4)
FILE NAME: z16v025bdr.dgn	PLOT DATE: 05/16/2016
PROJECT LEADER: C. LATHROP	DRAWN BY: J. GOODALL
DESIGNED BY: J. GOODALL	CHECKED BY: C. LATHROP
PLAN SHEET 3	SHEET 12 OF 18

4 INCH WHITE LINE, WATERBORNE PAINT &  
 TEMPORARY 4 INCH WHITE LINE, PAINT  
 (ALL LINES WILL INCLUDE EDGE LINE BREAKS  
 AND RADII AT TOWN HIGHWAYS)  
 MM W 1.600 - MM W 2.700 (SOLID LT & RT EDGE LINE)

4 INCH YELLOW LINE, WATERBORNE PAINT &  
 TEMPORARY 4 INCH YELLOW LINE, PAINT  
 (ALL LINES WILL INCLUDE CENTERLINE BREAKS  
 AT TOWN HIGHWAYS)  
 MM W 1.600 - MM W 2.700 (SOLID LT & RT)

24 INCH STOP BAR, WATERBORNE PAINT &  
 TEMPORARY 24 INCH STOP BAR, PAINT  
 MM W 2.116 - MM W 2.123 RT

LETTER OR SYMBOL, WATERBORNE PAINT &  
 TEMPORARY LETTER OR SYMBOL, PAINT  
 MM W 2.119 RT (STOP)



Item 621.79 Adjust Height - 87.5 LF

Extended paving/milling to 29' in from  
 Route 2A to line up with existing joint.

25'-0"

OLD CREAMERY RD  
 TH #3  
 MM W 2.116

WALKER HILL RD  
 TH #18  
 MM W 2.324

EXISTING PAVEMENT  
 WIDTH 28'

3'-11'-11'-3'  
 MM W 2.568

4'-11'-11'-4'  
 MM W 2.618

EXISTING PAVEMENT  
 WIDTH 30'

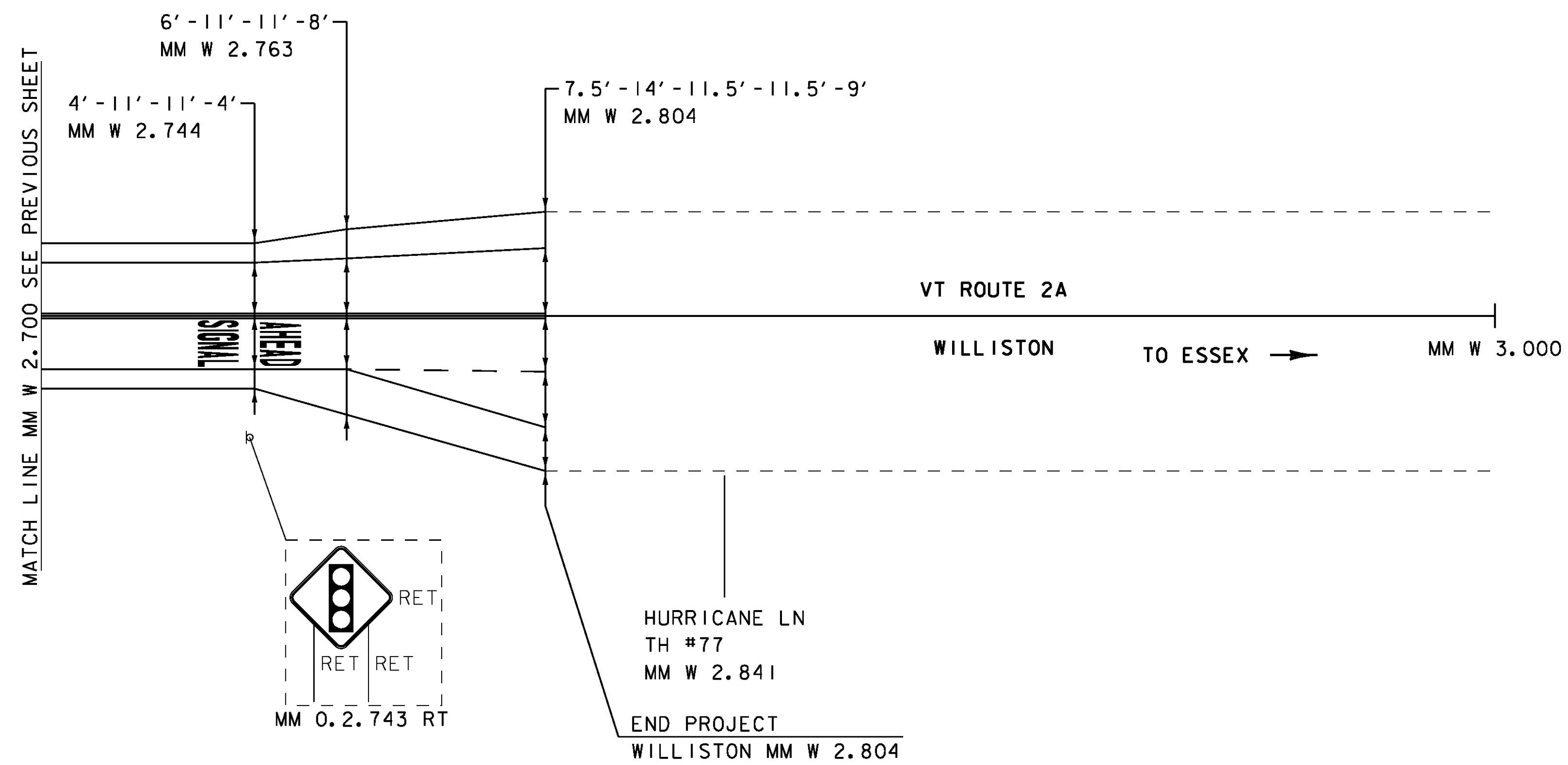
NOT TO SCALE

PROJECT NAME:	ST. GEORGE-WILLISTON
PROJECT NUMBER:	STP FPAV(4)
FILE NAME: z16v025bdr.dgn	PLOT DATE: 05/16/2016
PROJECT LEADER: C. LATHROP	DRAWN BY: J. GOODALL
DESIGNED BY: J. GOODALL	CHECKED BY: C. LATHROP
PLAN SHEET 4	SHEET 13 OF 18

4 INCH WHITE LINE, WATERBORNE PAINT &  
 TEMPORARY 4 INCH WHITE LINE, PAINT  
 (ALL LINES WILL INCLUDE EDGE LINE BREAKS  
 AND RADII AT TOWN HIGHWAYS)  
 MM W 2.700 - MM W 2.804 (SOLID LT & RT EDGE LINE)  
 MM W 2.763 - MM W 2.804 (DOTTED RT)

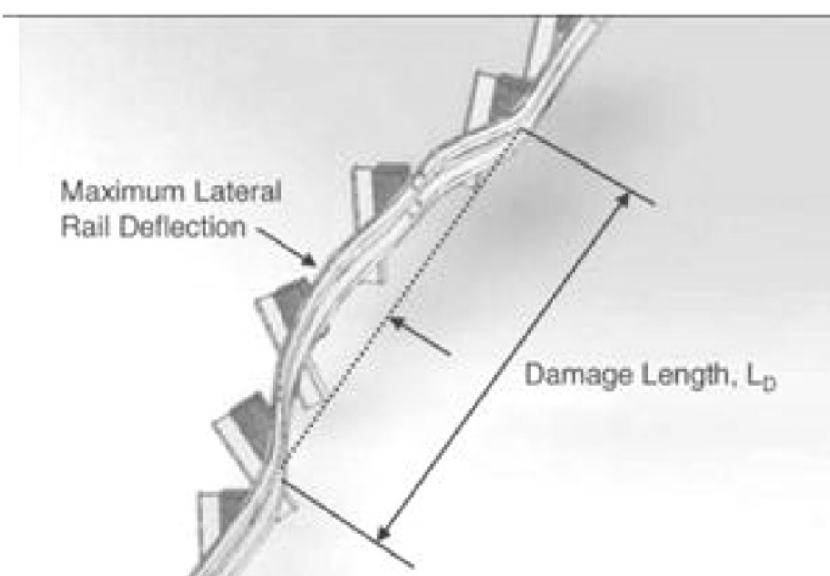
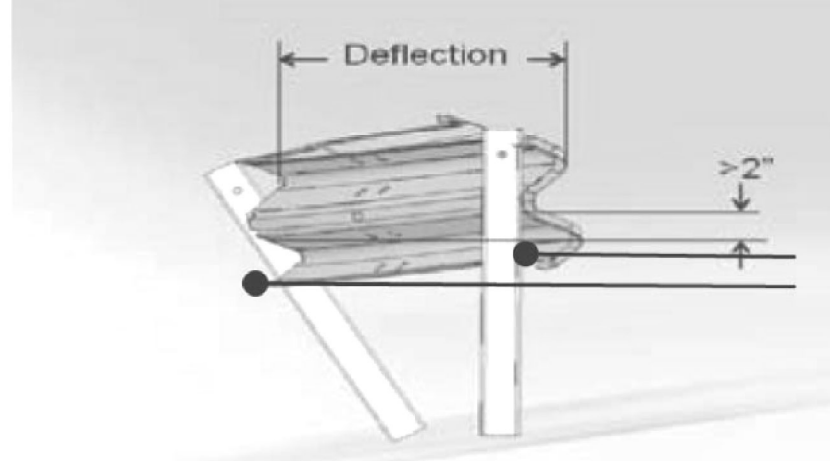
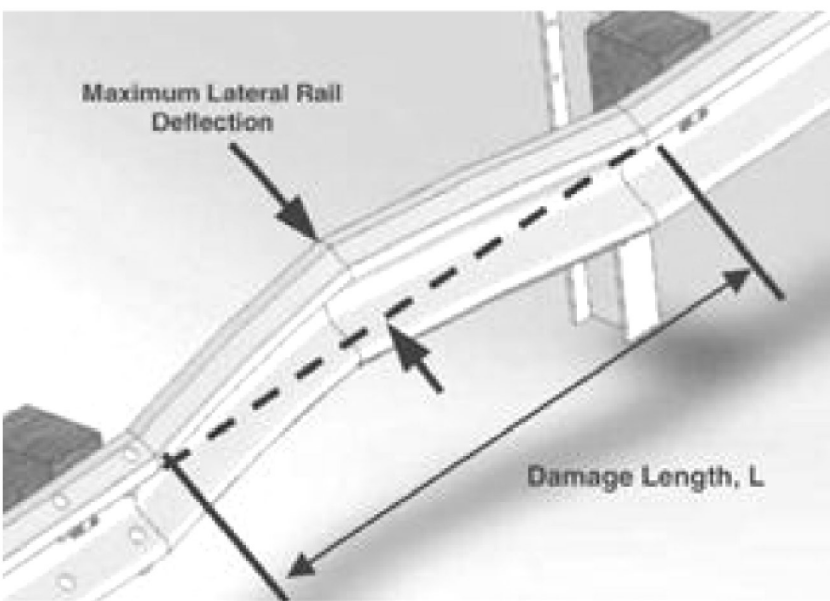
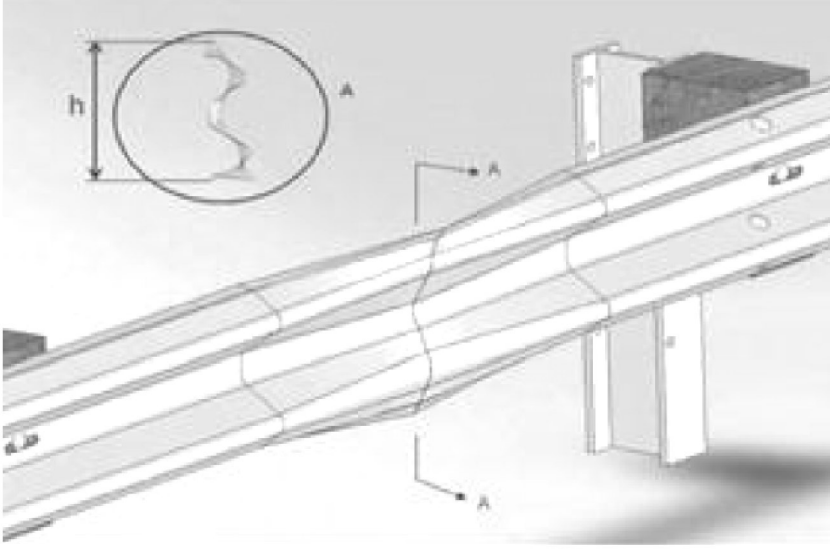
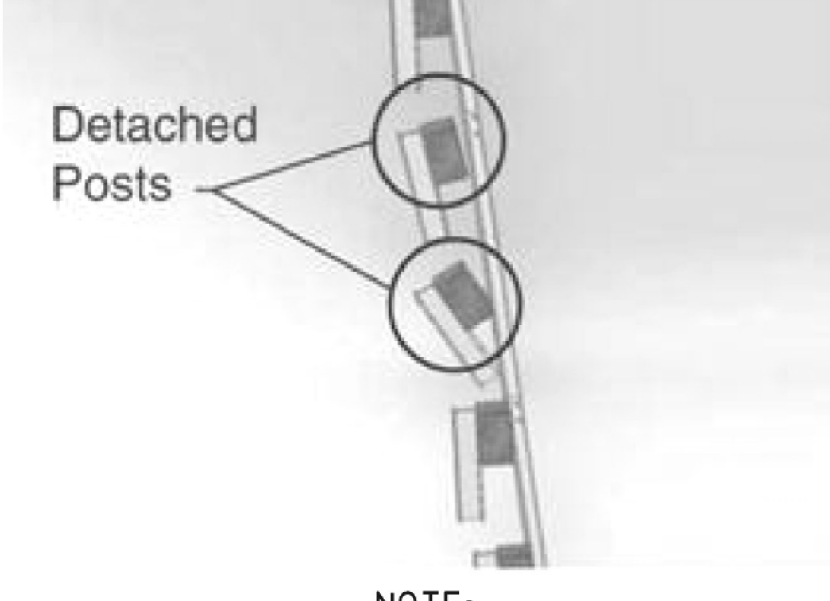
4 INCH YELLOW LINE, WATERBORNE PAINT &  
 TEMPORARY 4 INCH YELLOW LINE, PAINT  
 (ALL LINES WILL INCLUDE CENTERLINE BREAKS  
 AT TOWN HIGHWAYS)  
 MM W 2.700 - MM W 2.804 (SOLID LT & RT)

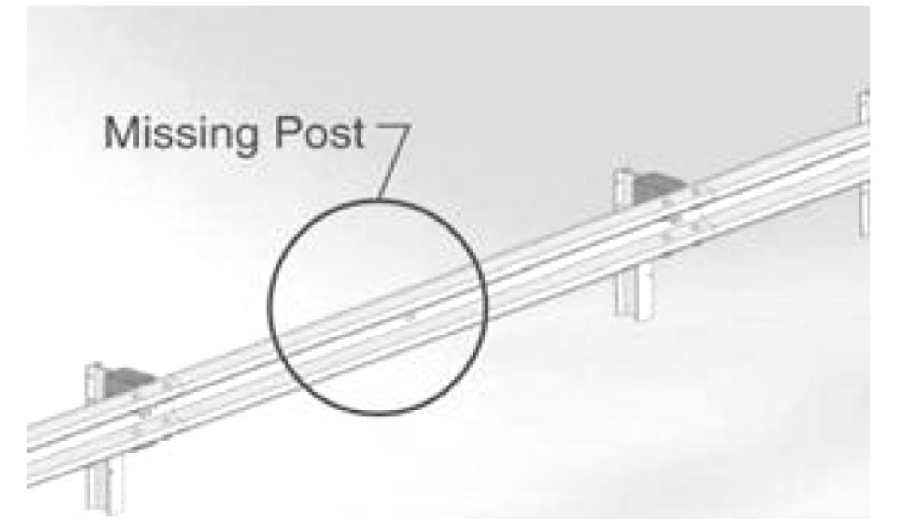
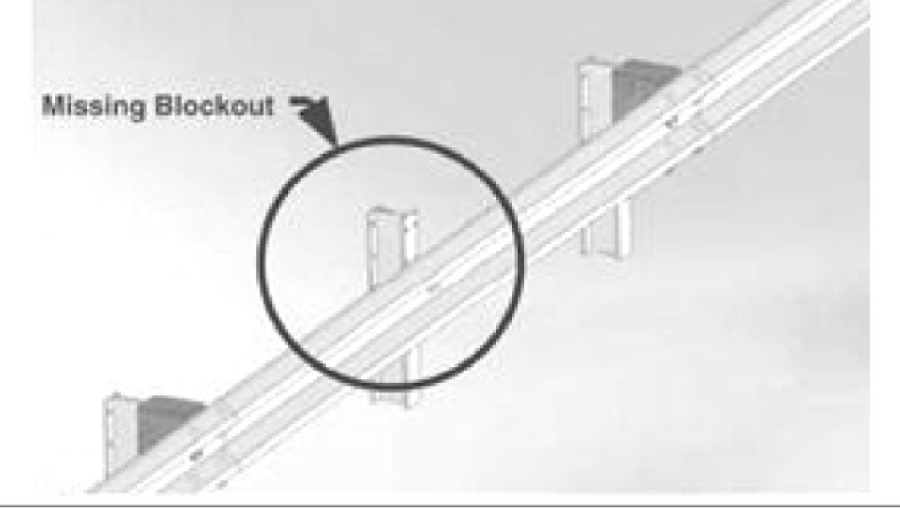
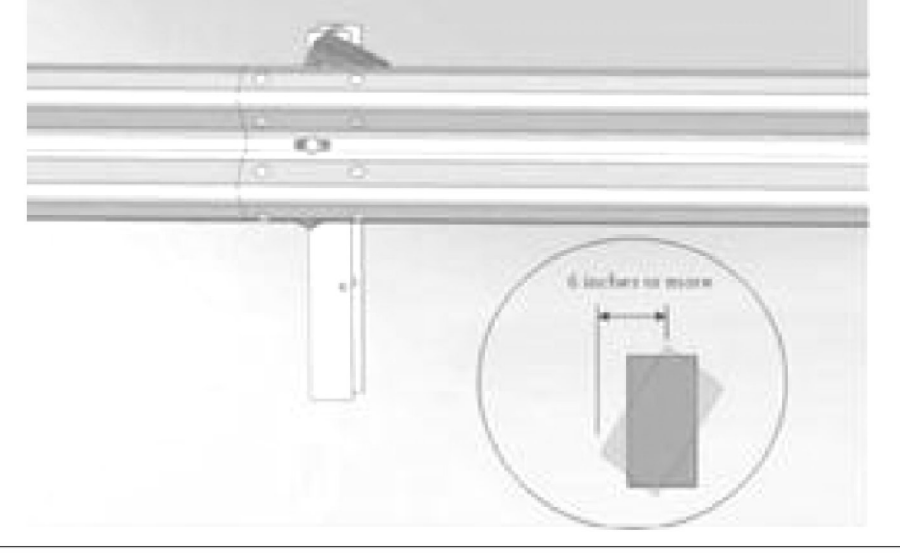

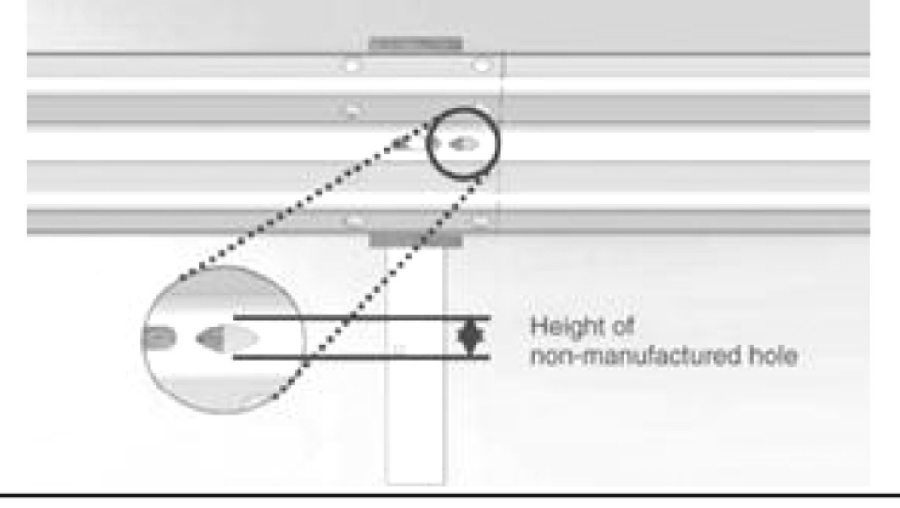
LETTER OR SYMBOL, WATERBORNE PAINT &  
 TEMPORARY LETTER OR SYMBOL, PAINT  
 MM W 2.739 RT (SIGNAL)  
 MM W 2.747 RT (AHEAD)



NOT TO SCALE

PROJECT NAME:	ST. GEORGE-WILLISTON
PROJECT NUMBER:	STP FPAV(4)
FILE NAME: z16v025bdr.dgn	PLOT DATE: 05/16/2016
PROJECT LEADER: C. LATHROP	DRAWN BY: J. GOODALL
DESIGNED BY: J. GOODALL	CHECKED BY: C. LATHROP
PLAN SHEET 5	SHEET 14 OF 18

DAMAGE TYPE	REPAIR THRESHOLD	RELATIVE PRIORITY	MEASUREMENT
POST AND RAIL DEFLECTION	ONE OR MORE OF THE FOLLOWING THRESHOLDS: <ul style="list-style-type: none"> <li>MORE THAN 9 IN. OF LATERAL DEFLECTION ANYWHERE OVER A 25 FT LENGTH OF RAIL TOP OF RAIL</li> <li>HEIGHT 2 OR MORE IN. LOWER THAN ORIGINAL TOP OF RAIL HEIGHT</li> </ul>	HIGH	
	6 - 9 IN. LATERAL DEFLECTION ANYWHERE OVER A 25-FT LENGTH OF RAIL	MEDIUM	
	LESS THAN 6 IN. OF LATERAL DEFLECTION OVER A 25-FT LENGTH OF RAIL	LOW	(WEAK POST W-BEAM SHOWN ONLY FOR CLARITY. EACH MEASUREMENT TAKEN AT THE RAIL'S MIDDLE FOLD)
RAIL DEFLECTION ONLY	6 - 9 IN. OF LATERAL DEFLECTION BETWEEN ANY TWO ADJACENT POSTS. NOTE: FOR DEFLECTION OVER 9 IN., USE POST/RAIL DEFLECTION GUIDELINES	MEDIUM	
	LESS THAN 6 IN. OF LATERAL DEFLECTION BETWEEN ANY TWO ADJACENT POSTS	LOW	
RAIL FLATTENING	ONE OR MORE OF THE FOLLOWING THRESHOLDS: <ul style="list-style-type: none"> <li>RAIL CROSS SECTION HEIGHT MORE THAN 17 IN. (SUCH AS MAY OCCUR IF RAIL IS FLATTENED)</li> <li>RAIL CROSS SECTION HEIGHT LESS THAN 9 IN. (SUCH AS A DENT TO TOP EDGE)</li> <li>* SEE NOTE 3 THIS SHEET.</li> </ul>	MEDIUM	
	RAIL CROSS SECTION HEIGHT BETWEEN 9 AND 17 IN.	LOW	
POSTS SEPARATED FROM RAIL	<ul style="list-style-type: none"> <li>2 OR MORE POSTS WITH BLOCKOUT ATTACHED WITH POST/RAIL SEPARATION LESS THAN 3 IN.</li> <li>1 OR MORE POSTS WITH POST/RAIL SEPARATION WHICH EXCEEDS 3 IN.</li> </ul>	MEDIUM	
	<ul style="list-style-type: none"> <li>1 POST, WITH BLOCKOUT ATTACHED, WITH POST/RAIL SEPARATION LESS THAN 3 IN.</li> </ul>	LOW	NOTE: 1. IF THE BLOCKOUT IS NOT FIRMLY ATTACHED TO THE POST, USE THE MISSING BLOCKOUT GUIDELINES. 2. DAMAGE SHOULD ALSO BE EVALUATED AGAINST POST/RAIL DEFLECTION GUIDELINES.

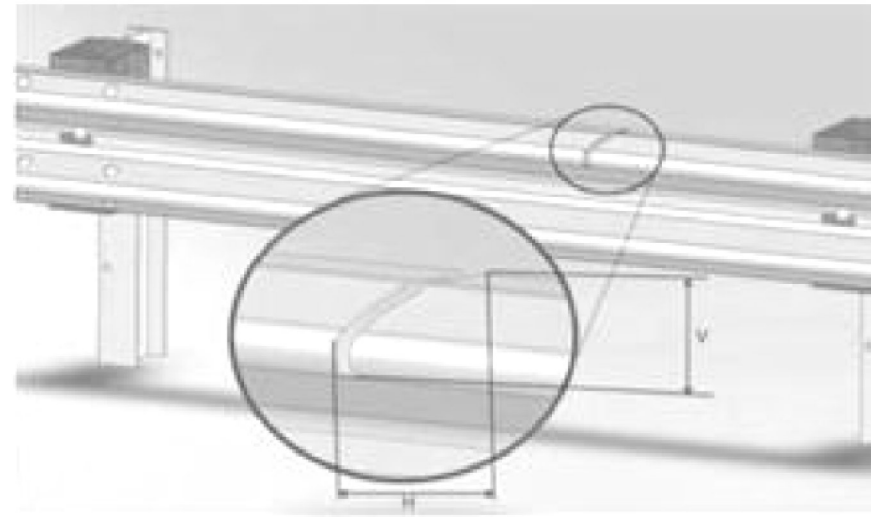
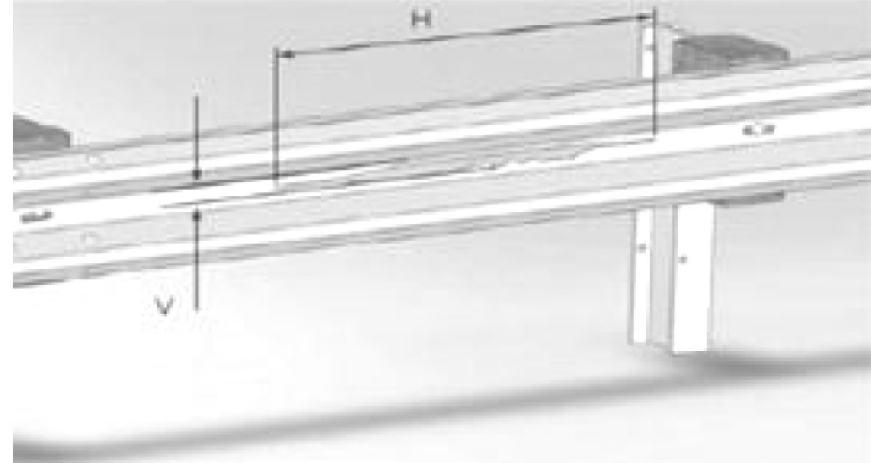
DAMAGE TYPE	REPAIR THRESHOLD	RELATIVE PRIORITY	MEASUREMENT
MISSING/BROKEN POSTS	1 OR MORE POSTS <ul style="list-style-type: none"> <li>MISSING</li> <li>CRACKED ACROSS THE GRAIN</li> <li>BROKEN</li> <li>ROTTED</li> <li>WITH METAL TEARS</li> </ul>	HIGH	
MISSING BLOCKOUT	ANY BLOCKOUTS <ul style="list-style-type: none"> <li>MISSING</li> <li>CRACKED ACROSS THE GRAIN</li> <li>CRACKED FROM TOP OR BOTTOM OF BLOCKOUT THROUGH POST BOLT HOLE</li> <li>ROTTED</li> </ul>	MEDIUM	
TWISTED BLOCKOUTS	ANY MISALIGNED BLOCKOUTS, TOP EDGE OF BLOCK 6 IN. OR MORE FROM BOTTOM EDGE  NOTE: REPAIRS OF TWISTED BLOCKOUT ARE RELATIVELY QUICK AND INEXPENSIVE	LOW	
DAMAGE AT A RAIL SPLICE	MORE THAN 1 SPLICE BOLT: <ul style="list-style-type: none"> <li>MISSING</li> <li>DAMAGED</li> <li>VISIBLY MISSING ANY UNDERLYING RAIL</li> <li>TORN THROUGH RAIL</li> </ul>	HIGH	
	1 SPLICE BOLT: <ul style="list-style-type: none"> <li>MISSING</li> <li>DAMAGED</li> <li>VISIBLY MISSING ANY UNDERLYING RAIL</li> <li>TORN THROUGH RAIL</li> </ul>	MEDIUM	
NON-MANUFACTURED HOLE (SUCH AS CRASH-INDUCED HOLES, LUG-NUT DAMAGE, OR HOLES RUSTED-THROUGH THE RAIL)	<ul style="list-style-type: none"> <li>MORE THAN 2 HOLES LESS THAN 1IN. HEIGHT IN A 12.5-FT LENGTH OF RAIL</li> <li>ANY HOLES GREATER THAN 1IN. IN HEIGHT</li> <li>ANY HOLE WHICH INTERSECTS EITHER THE TOP OR BOTTOM EDGE OF THE RAIL</li> </ul>	HIGH	
	1 - 2 HOLES LESS THAN 1IN. IN HEIGHT IN A 12.5-FT LENGTH OF RAIL	MEDIUM	


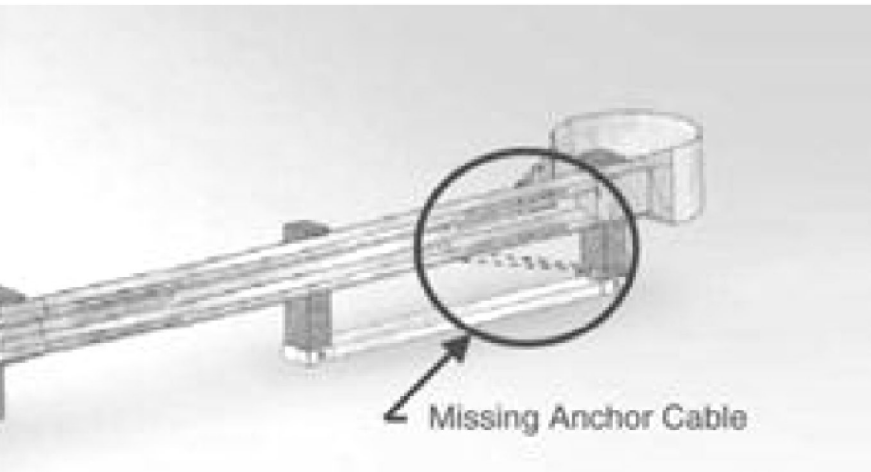
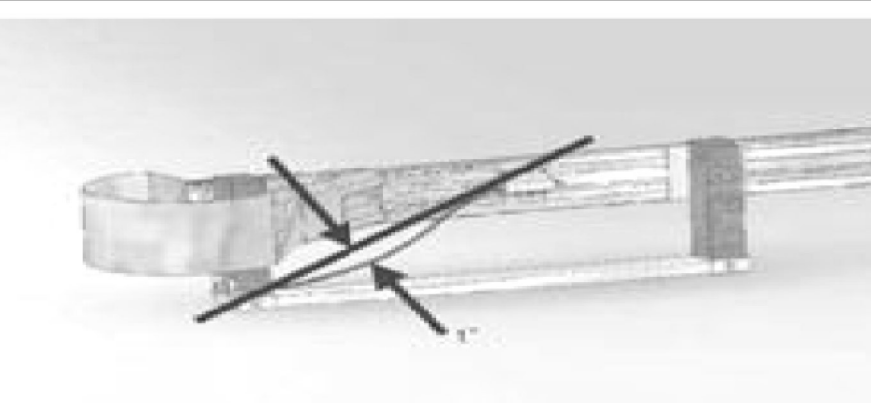
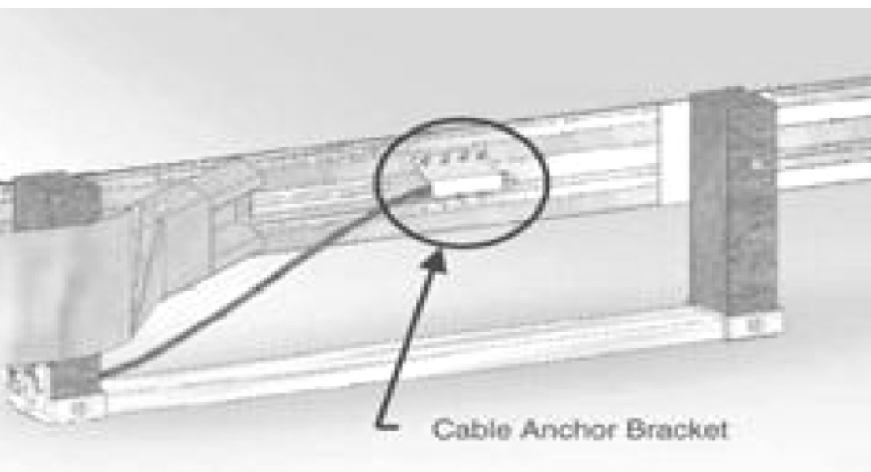
NOTES:

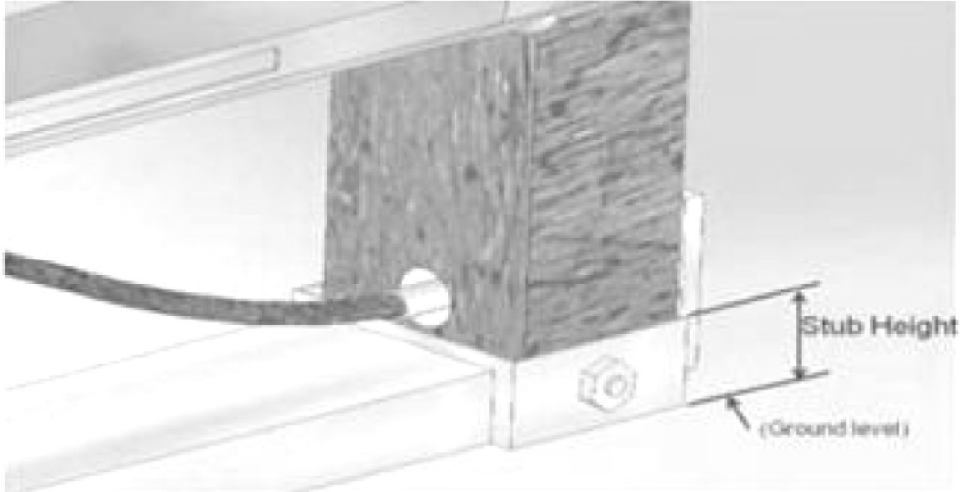
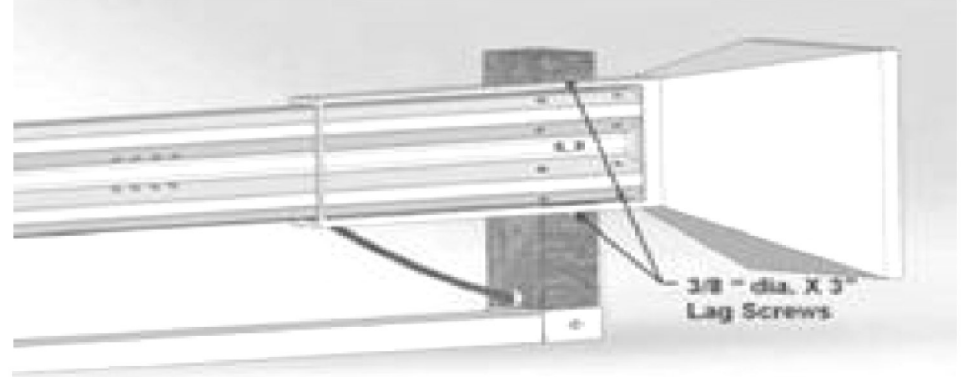
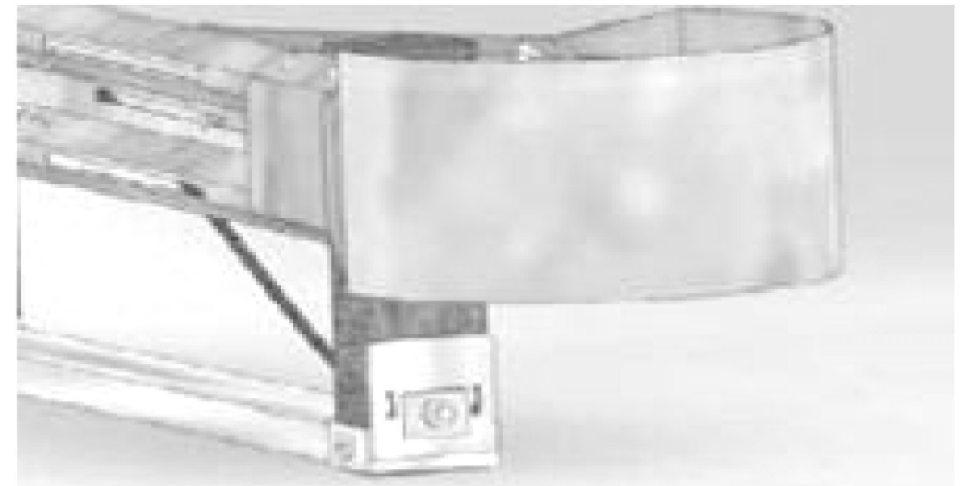
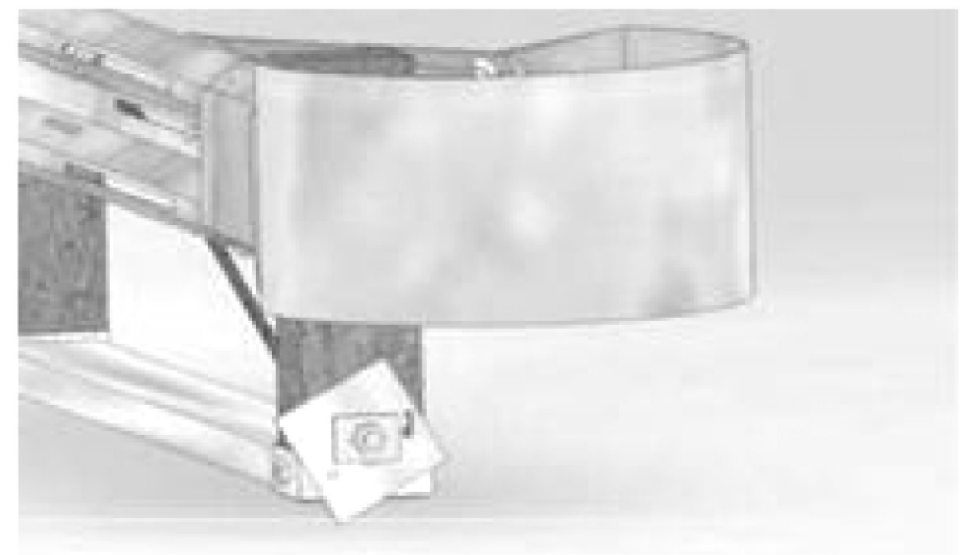
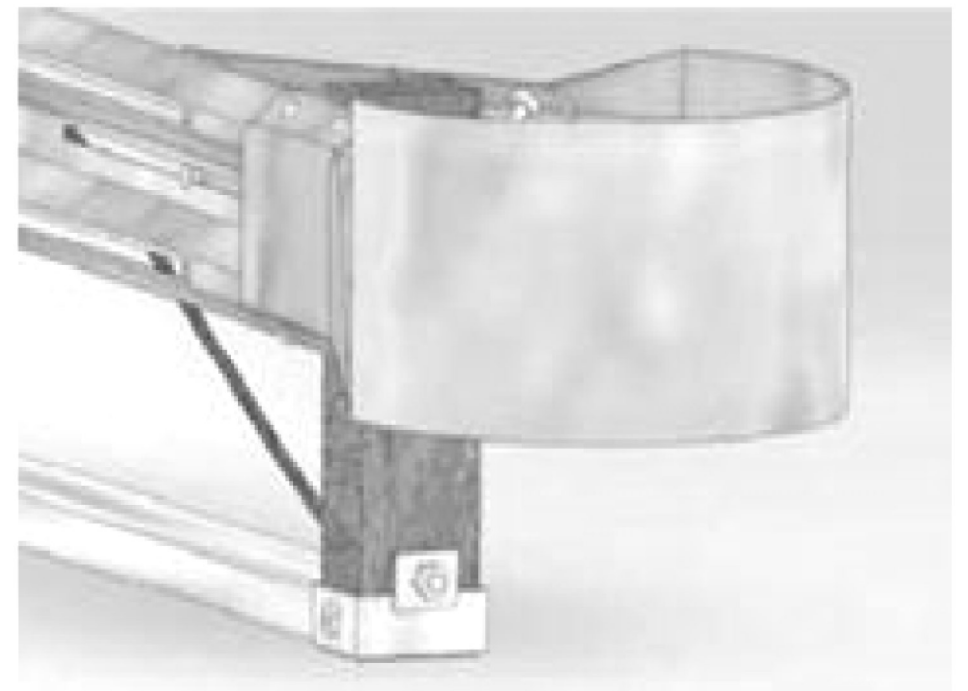
- THESE ARE GUIDELINES FOR THE EVALUATION OF EXISTING GUARDRAIL. THESE ARE GUIDELINES ONLY AND THE CONTRACTOR SHALL REPLACE GUARDRAIL AS DIRECTED BY THE ENGINEER.
- GUIDELINES ARE FROM THE NATIONAL HIGHWAY RESEARCH PROGRAM (NCHRP) REPORT 656, "CRITERIA FOR RESTORATION OF LONGITUDINAL BARRIERS", COPYRIGHT 2010.
- WHEN GUARDRAIL IS TO BE REMOVED AND RESET, PANELS WITH A RAIL CROSS SECTION HEIGHT OF 15 INCHES OR GREATER SHALL BE REPLACED

PROJECT NAME:	ST. GEORGE-WILLISTON
PROJECT NUMBER:	STP FPAV(4)
FILE NAME: z16v025det.dgn	PLOT DATE: 05/16/2016
PROJECT LEADER: C. LATHROP	DRAWN BY: O. DALMER
DESIGNED BY: J. GOODALL	CHECKED BY: C. LATHROP
GUARDRAIL REPLACE. GUIDELINES SHEET 1	SHEET 15 OF 18

NOT TO SCALE

DAMAGE TYPE	REPAIR THRESHOLD	RELATIVE PRIORITY	MEASUREMENT
VERTICAL TEAR	ANY LENGTH VERTICAL (TRANSVERSE) TEAR	HIGH	
HORIZONTAL TEAR	HORIZONTAL (LONGITUDINAL) GREATER THAN 12 IN. LONG AND GREATER THAN 0.5 IN. WIDE  NOTE: FOR HORIZONTAL TEARS LESS THAN 12 IN. IN LENGTH OR LESS THAN 0.5 IN. IN HEIGHT, USE THE NON-MANUFACTURED HOLES GUIDELINES	MEDIUM	

DAMAGE	REPAIR THRESHOLD	RELATIVE PRIORITY	MEASUREMENT
DAMAGED END POST	NOT FUNCTIONAL (SHEARED, ROTTED CRACKED ACROSS THE GRAIN)	HIGH	
ANCHOR CABLE	MISSING	HIGH	
ANCHOR CABLE	LOOSE - MORE THAN 1IN. OF MOVEMENT WHEN PUSHED DOWN BY HAND	MEDIUM	
CABLE ANCHOR BRACKET	LOOSE OR NOT FIRMLY SEATED IN RAIL	MEDIUM	

DAMAGE	REPAIR THRESHOLD	RELATIVE PRIORITY	MEASUREMENT
STUB HEIGHT	HEIGHT WHICH EXCEEDS 4 IN.	MEDIUM	
LAG SCREWS (ENERGY ABSORBING TERMINALS ONLY)	MISSING OR FAILED LAG SCREWS	HIGH	
BEARING PLATE	LOOSE OR MISALIGNED	MEDIUM	 (CORRECT BEARING PLATE)
			 (MISALIGNED BEARING PLATE)
			 (MISSING BEARING PLATE)

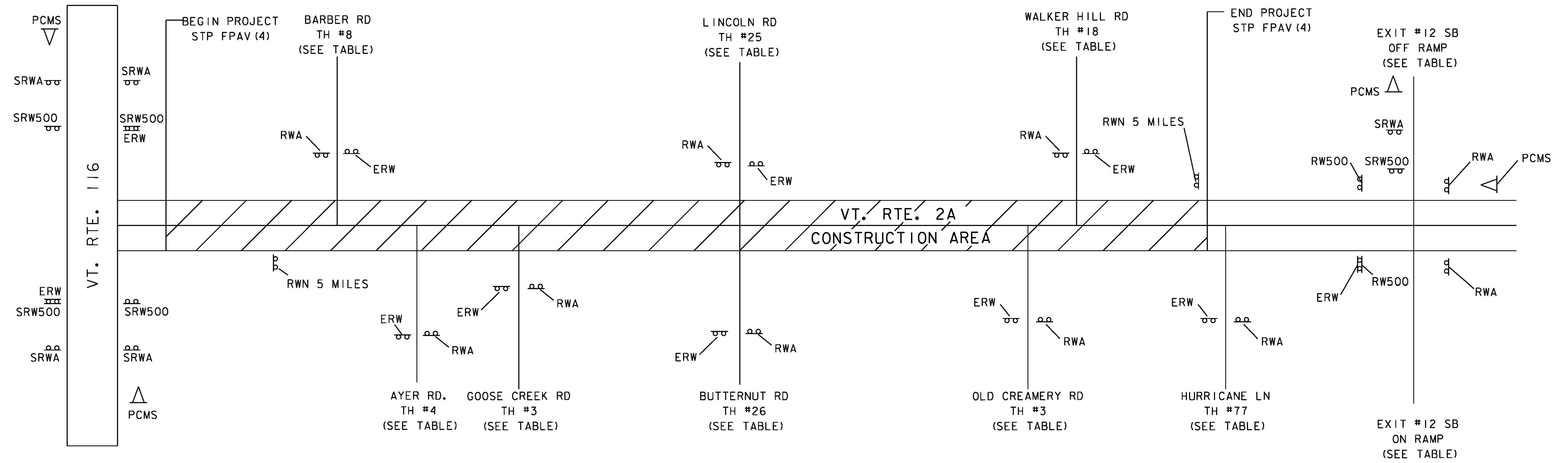
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PROJECT LEADER: C. LATHROP DRAWN BY: O. DALMER  
DESIGNED BY: J. GOODALL CHECKED BY: C. LATHROP  
GUARDRAIL REPLACE. GUIDELINES SHEET 2 SHEET 16 OF 18

NOT TO SCALE



SEE VAOT STANDARD T-10 & T-17 FOR SIGN PLACEMENT.

LOCATION	ERW	RW500	RWA	SRWA	SRW500	RWN	▷
BEGINING OF PROJECT VT 116	2			4	4	1	2
BARBER RD TH#8	1		1				
AYER RD TH#4	1		1				
GOOSE CREEK RD TH#3	1		1				
LINCOLN RD TH#25	1		1				
BUTTERNUT RD TH#26	1		1				
OLD CREAMERY RD TH#3	1		1				
WALKER HILL RD TH#18	1		1				
HURRICANE LN TH#77	1		1				
EXIT #12 SB OFF RAMP				1	1		1
END OF PROJECT VT 2A	1	2	2			1	1
TOTALS	11	2	10	5	5	2	4

**LEGEND**

- ERW = END ROAD WORK
- RW500 = ROAD WORK 500 FT
- RWA = ROAD WORK AHEAD
- SRWA = SIDE ROAD WORK AHEAD
- SRW500 = SIDE ROAD WORK 500 FT
- RWN 5 MILES = ROAD WORK NEXT 5 MILES
- ▷ = PORTABLE CHANGEABLE MESSAGE SIGN

PROJECT NAME: ST. GEORGE-WILLISTON  
 PROJECT NUMBER: STP FPAV(4)

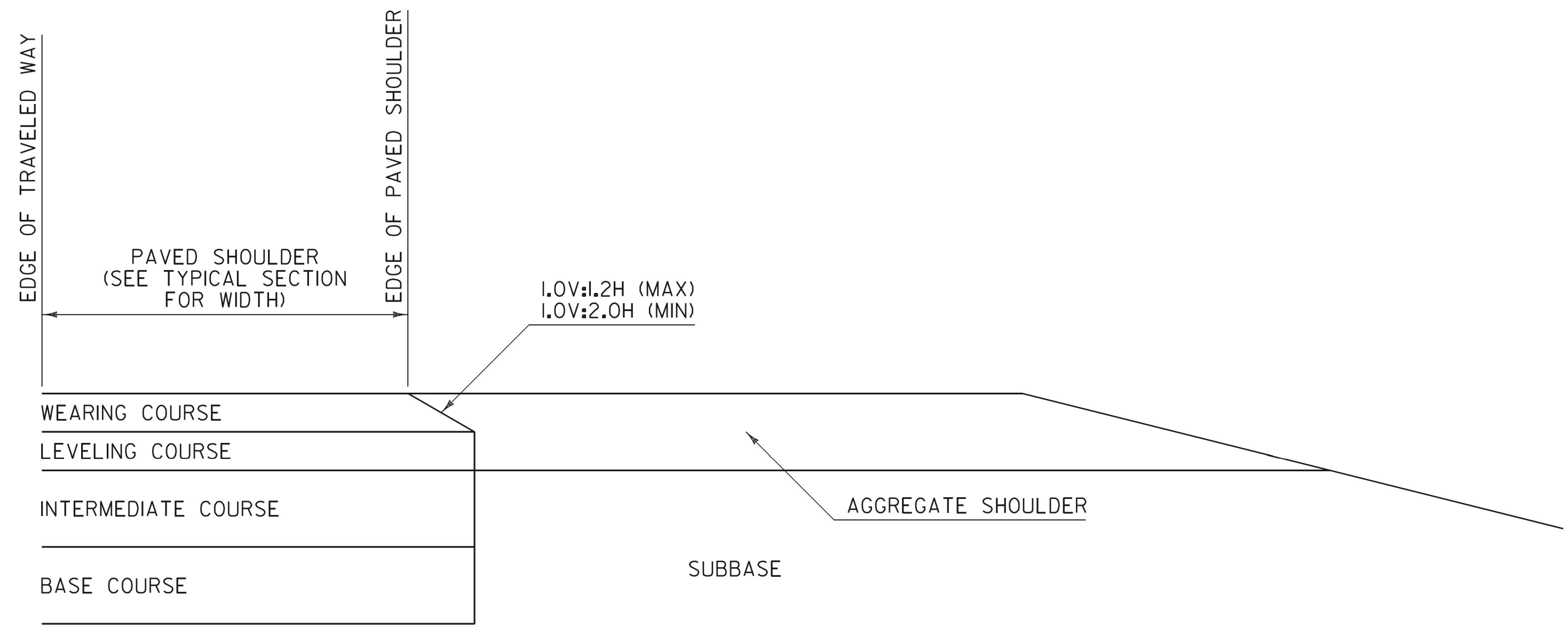
FILE NAME: z16v025cas.dgn PLOT DATE: 05/16/2016  
 PROJECT LEADER: C. LATHROP DRAWN BY: O. DALMER  
 DESIGNED BY: J. GOODALL CHECKED BY: C. LATHROP  
 CONSTRUCTION APPROACH SIGNING SHEET SHEET 17 OF 18

NOT TO SCALE

**TRAFFIC CONTROL NOTES**

1. THE CONTRACTOR SHALL SUBMIT A SITE SPECIFIC TRAFFIC CONTROL PLAN TO THE ENGINEER FOR APPROVAL PRIOR TO THE START OF CONSTRUCTION. CONSTRUCTION OPERATIONS SHALL NOT BEGIN UNTIL THE TRAFFIC CONTROL PLAN IS APPROVED BY THE ENGINEER. THE CONTRACTOR SHALL INCLUDE A CONSTRUCTION SIGN PACKAGE FOR EXPECTED LANE CLOSURES, WORK ZONE SPEED REDUCTIONS AND PEDESTRIAN ACCESS IN COMPLIANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). THE COST OF PREPARING THIS PLAN (AND MAKING CHANGES IF NECESSARY) WILL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 641.10, "TRAFFIC CONTROL".
2. THE CONTRACTOR SHALL POSITION PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) WARNING MOTORISTS OF THE EXPECTED ROADWAY CONDITIONS AHEAD. THE MESSAGE TO BE DISPLAYED, AND THEIR PROPOSED LOCATIONS SHALL BE SUBMITTED TO THE ENGINEER IN ADVANCE FOR APPROVAL. THE PCMS SHOULD BE RELOCATED AS DETERMINED BY THE ENGINEER TO PROVIDE WORK ZONE TRAVEL INFORMATION THAT IS OTHERWISE DIFFICULT TO CONVEY WITH STATIC SIGNS. THE COST OF PROVIDING THESE MESSAGE SIGNS AND THEIR RELOCATION IF NECESSARY WILL BE PAID UNDER ITEM 641.15, "PORTABLE CHANGEABLE MESSAGE SIGN".
3. THE BID PRICE FOR TRAFFIC CONTROL, ITEM 641.10, SHALL INCLUDE BUT IS NOT LIMITED TO ALL OF THE FOLLOWING, AS NEEDED: APPROACH AND ON-PROJECT CONSTRUCTION SIGNING, PORTABLE FLASHING ARROW BOARDS, BARRIERS, BARRELS, CONES, BARRICADES, TEMPORARY REGULATORY AND WARNING SIGNS, AND POSTS AS DETAILED IN THE MUTCD AND VAOT STANDARDS. ALL ADJUSTING, RELOCATING AND REMOVING OF THESE DEVICES AS DIRECTED BY THE ENGINEER SHALL ALSO BE INCLUDED.
4. THE LATEST EDITION OF THE MUTCD SHALL BE THE STANDARD FOR ALL TRAFFIC CONTROL DEVICES. EXISTING SIGNS AND MARKINGS SHALL BE VALID UNTIL SUCH TIME AS THEY ARE REPLACED OR RECONSTRUCTED. WHEN NEW TRAFFIC CONTROL DEVICES ARE ERECTED OR PLACED, OR EXISTING TRAFFIC CONTROL DEVICES ARE REPLACED OR REPAIRED, THE EQUIPMENT, DESIGN, METHOD OF INSTALLATION, PLACEMENT OR REPAIR SHALL CONFORM WITH SUCH STANDARDS.
5. NO CONSTRUCTION SIGNS SHALL BE INSTALLED AS TO INTERFERE OR OBSTRUCT THE VIEW OF EXISTING TRAFFIC CONTROL DEVICES, STOPPING SIGHT DISTANCE, AND CORNER SIGHT DISTANCE FROM DRIVES AND TOWN HIGHWAYS. EXISTING SIGNS WHICH CONFLICT WITH TEMPORARY TRAFFIC CONTROL SHALL BE COMPLETELY COVERED OR REMOVED.
6. SEE VAOT STANDARDS T-10 AND T-17 FOR ADDITIONAL SIGN PLACEMENT DETAILS.
7. CONSTRUCTION ZONE SIGN LAYOUT SHALL BE IN ACCORDANCE WITH SECTION 6 OF THE LATEST EDITION OF THE MUTCD, AND AS OUTLINED IN THE SPECIAL PROVISIONS.
8. CONSTRUCTION SIGNS SHALL BE IN NEW OR LIKE NEW CONDITION PER VAOT STANDARDS AND SPECIAL PROVISIONS.
9. DIAMOND SHAPED SIGNS SHALL BE FOUR FOOT BY FOUR FOOT WITH BLACK TEXT AND BORDER ON A RETROREFLECTIVE FLUORESCENT ORANGE BACKGROUND.
10. RETROREFLECTIVE SHEETING SHALL BE AS NOTED ON VAOT STANDARD T-1 AND IN SUBSECTION 750.08
11. WHERE TEMPORARY SIGNS ARE PLACED BEHIND GUARDRAIL, THEY SHALL BE ADJUSTED SUCH THAT THE BOTTOMS OF THE SIGNS ARE ABOVE THE TOP OF GUARDRAIL.
12. AS THE CONSTRUCTION OPERATION MOVES, FLAGGER SIGNS SHALL BE MOVED ACCORDINGLY. AT NO TIME SHOULD THE FLAGGER SYMBOL SIGN BE MORE THAN 500 FEET FROM THE FLAGGER STATION. FLAGGER SIGNS SHALL BE COVERED OR TURNED AWAY FROM TRAFFIC WHEN FLAGGING OPERATIONS CEASE FOR LONGER THAN 15 MINUTES.
13. BARRELS AND CONES SHALL BE USED TO CLEARLY DEFINE THE TRAVEL SPACE AND PROVIDE SEPARATION FROM THE WORK SPACE ALONG ITS ENTIRE LENGTH.
14. FOR TRAFFIC CONTROL GENERAL NOTES, SEE VAOT STANDARD T-1.
15. THE CONTRACTOR SHALL PROVIDE ACCESS THROUGH THE WORK ZONE AND MAINTAIN ACCESS TO ALL PROPERTIES FOR EMERGENCY VEHICLES AT ALL TIMES. ACCESS TO ALL COMMERCIAL AND MUNICIPAL PROPERTIES SHALL BE MAINTAINED DURING BUSINESS HOURS. ACCESS TO RESIDENTIAL PROPERTIES MAY BE RESTRICTED FOR A SHORT DURATION (A FEW HOURS). THIS WORK SHALL BE COORDINATED WITH THE OWNER. COORDINATE MAJOR WORK ON COMMERCIAL OR MUNICIPAL ACCESSES WITH THE OWNER AT LEAST ONE WEEK PRIOR TO STARTING THE WORK. ALL ACCESSES SHALL ALSO BE KEPT FREE OF WORK AND TRAFFIC CONTROLLED BY UNIFORMED TRAFFIC OFFICERS OR FLAGGERS AS REQUIRED BY THE ENGINEER.
16. A MINIMUM LANE WIDTH OF 10 FT. SHALL BE MAINTAINED.
17. WHEN COLD PLANED BITUMINOUS PAVEMENT IS OPEN TO TRAFFIC, A "MOTORCYCLES USE CAUTION" SIGN, AS PER VAOT STANDARD T-17, SHALL BE PROVIDED.
18. THE CONTRACTOR SHOULD LEAVE NO LONGITUDINAL DROP-OFFS DURING THE OVERNIGHT HOURS. THEREFORE, THE FULL ROADWAY WIDTH SHOULD BE COLD PLANED OR PAVED DURING THE DAILY WORK PERIOD. WHEN NECESSARY, DROP-OFF PROTECTION IN THESE AREAS SHALL CONFORM TO VAOT STANDARD T-36.
19. TRAFFIC SHALL NOT BE CHANGED FROM ONE TRAFFIC PATTERN TO THE NEXT TRAFFIC PATTERN UNTIL ALL TEMPORARY MARKINGS AND SIGNING WORK ARE COMPLETED. ANY CONFLICTING MARKINGS SHALL BE REMOVED.
20. ALL REASONABLE EFFORTS SHALL BE MADE TO ACCOMMODATE PEDESTRIAN TRAVEL AT ALL TIMES. THIS CAN INCLUDE, BUT IS NOT LIMITED TO A DEDICATED PEDESTRIAN ESCORT, SIGNAGE AND CONED OFF WALKING AREAS WITHIN CLOSED LANES. FLAGGERS SHALL NOT BE USED AS PEDESTRIAN ESCORTS. WHEN EXISTING PEDESTRIAN FACILITIES ARE DISRUPTED, CLOSED, OR RELOCATED IN A TEMPORARY TRAFFIC CONTROL ZONE, THE TEMPORARY FACILITIES SHALL BE DETECTABLE AND SHALL INCLUDE ACCESSIBILITY FEATURES CONSISTENT WITH THE FEATURES PRESENT IN THE EXISTING PEDESTRIAN FACILITY. PAYMENT WILL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 641.10 TRAFFIC CONTROL.
21. PLEASE NOTE THAT THE UTO (UNIFORMED TRAFFIC OFFICER), UNDER AUTHORITY GRANTED BY LAW (TITLE 23 VSA) MAY DIRECT AND CONTROL TRAFFIC. SUITABLE EXAMPLES IN WORK MIGHT INCLUDE THE DIRECTION AND CONTROLS OF TRAFFIC AT INTERSECTIONS WHERE SIGNALS ARE NOT FUNCTIONING OR ARE MALFUNCTIONING. IN THESE CASES, THE PRESENCE OF THE BLUE LIGHT MAY NOT BE SUITABLE OR NECESSARY. THE WEARING OF DEPARTMENTALLY REQUIRED AND APPROVED REFLECTIVE GARMENTS IS REQUIRED.

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DESIGNED BY: J. GOODALL	CHECKED BY: C. LATHROP
TRAFFIC CONTROL NOTES SHEET	SHEET 18 OF 18

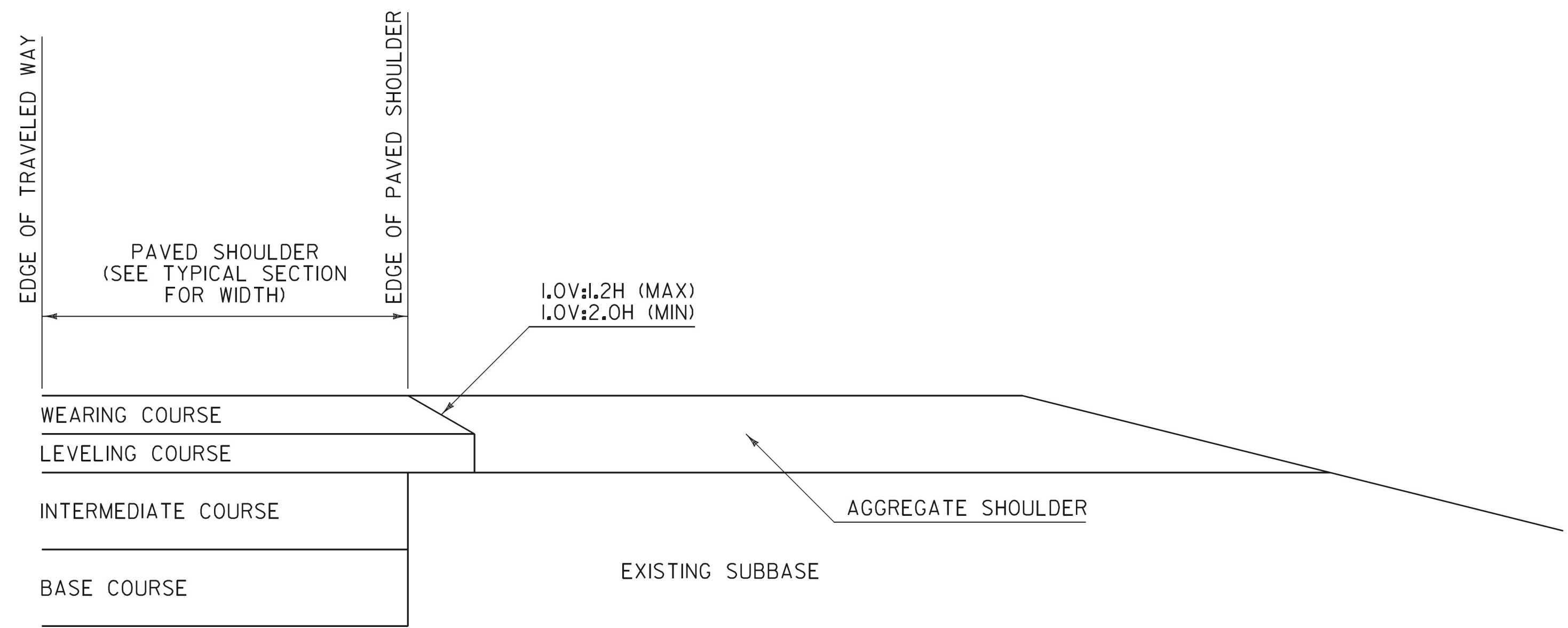


**NOTES:**

1. THIS DETAIL IS INTENDED FOR WHEN PAVING EXTENDS BELOW THE WEARING COURSE.
2. PRIOR TO PLACEMENT OF THE LEVELING AND/OR WEARING COURSE, THE SUBBASE LOCATED BENEATH THE AGGREGATE SHOULDER SHALL BE PREPARED FLUSH WITH THE BOTTOM OF THE LEVELING COURSE.
3. BASE COURSE LIMITS MAY VARY, SEE TYPICAL SECTIONS FOR WIDTH.

**SAFETY EDGE DETAIL  
FOR PAVING BELOW WEARING COURSE**

SAFETY EDGE WIDTH BASED ON WEARING COURSE THICKNESS AND A 1V:1.6H SLOPE	
WEARING COURSE THICKNESS (INCHES)	NOMINAL SAFETY EDGE WIDTH (INCHES)
1.25	2.000
1.50	2.375
1.75	2.750
2.00	3.125
2.25	3.500
2.50	4.000



**NOTES:**

1. THIS DETAIL IS INTENDED FOR WHEN ONLY THE LEVELING AND/OR WEARING COURSE IS TO BE PLACED.
2. PAVEMENT COURSES MAY VARY, SEE TYPICAL SECTIONS FOR ACTUAL PAVEMENT COURSES REQUIRED.

**SAFETY EDGE DETAIL  
FOR PAVING WEARING COURSE ONLY**

**GENERAL NOTES:**

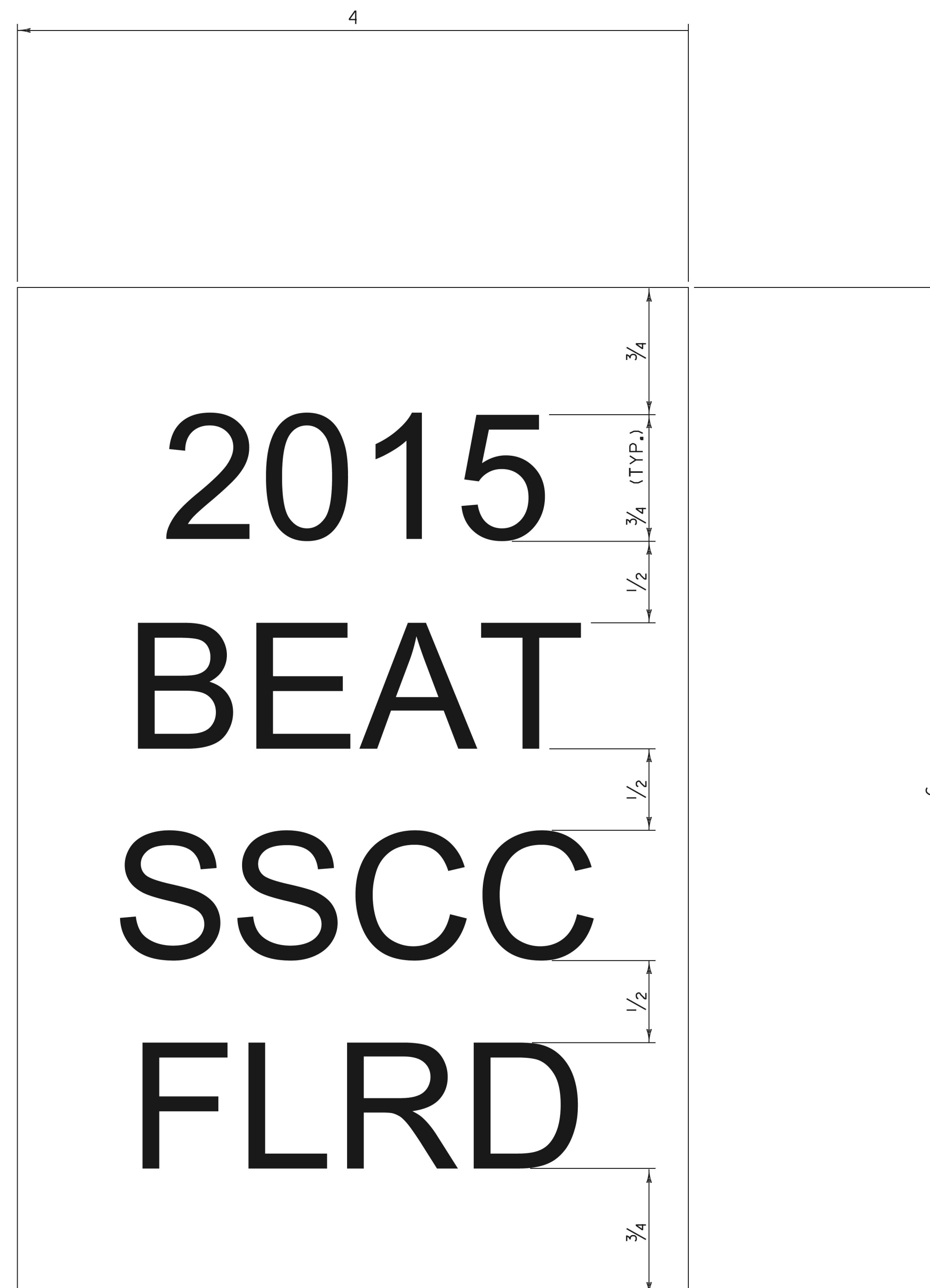
1. PLACEMENT OF THE WEARING COURSE SHALL INCLUDE THE SAFETY EDGE, UNLESS THE FOLLOWING APPLIES:
  - A. THE ADJACENT SLOPE IS STEEPER THAN THE SAFETY EDGE.
  - B. THE EDGE OF PAVEMENT BEING PLACED ABUTS BOUND MATERIAL.
  - C. VEHICLES ARE RESTRICTED FROM LEAVING THE PAVED SURFACE (EXAMPLE: GUARDRAIL).
2. THE SAFETY EDGE SHALL BE FORMED IN SUCH A WAY THAT THE BITUMINOUS CONCRETE PAVEMENT IS EXTRUDED OR COMPRESSED TO FORM THE SLOPE. DEVICES THAT SIMPLY STRIKE-OFF THE MIX WITHOUT PROVIDING ANY COMPACTIVE EFFORT WILL NOT BE ALLOWED.
3. THE SAFETY EDGE SHALL NOT BE CONSIDERED PART OF THE PAVED SHOULDER.
4. THIS WORK SHALL BE INCIDENTAL TO THE RESPECTIVE BITUMINOUS CONCRETE PAVEMENT ITEM.

REV.	DATE	DESCRIPTION
0	MAR. 29, 2016	ORIGINAL APPROVAL
OTHER DETAILS REQUIRED: NONE		
DETAILS APPROVED FOR USE BY HIGHWAY SAFETY & DESIGN		

SAFETY EDGE DETAILS



HIGHWAY SAFETY  
& DESIGN DETAIL  
**HSD-400.01**



**GENERAL NOTES:**

1. LINE ONE SHALL INDICATE THE INSTALLATION YEAR (YYYY).
2. LINE TWO SHALL INDICATE THE MODEL AS IDENTIFIED ON THE APPROVED PRODUCTS LIST. FOR GENERIC INSTALLATIONS THE STANDARD DRAWING DESIGNATION OR NAME AS IDENTIFIED IN THE FHWA ELIGIBILITY LETTER SHALL BE USED.
3. LINE THREE SHALL INDICATE ADDITIONAL MODEL INFORMATION IF NECESSARY.
4. LINE FOUR SHALL INDICATE FLARED (FLRD) OR TANGENT (TANG).
5. LEGEND SHALL BE ONE ARIEL FONT.
6. LEGEND SHALL BE BLACK ON A WHITE BACKGROUND, LEGEND AND BACKGROUND SHALL NOT BE REFLECTIVE.
7. SUITABLE MATERIAL SHALL BE USED SO AS TO NOT DETERIORATE DURING EXPOSURE TO WEATHER.
8. LABELS SHALL BE APPLIED IN SUCH A WAY THAT THEY REMAIN INTACT DURING THE LIFE OF THE TERMINAL.
9. FOR W-BEAM GUARDRAIL, LABEL SHALL BE PLACED ON THE TOP OF POST ONE FACING AWAY FROM TRAFFIC.
10. FOR BOX BEAM GUARDRAIL, LABEL SHALL BE PLACED ON THE BOX BEAM ADJACENT TO POST ONE FACING AWAY FROM TRAFFIC.
11. PAYMENT SHALL BE INCIDENTAL TO OTHER TRAFFIC BARRIER ITEMS.
12. ALL DIMENSIONS IN INCHES.

REV.	DATE	DESCRIPTION
0	NOV. 3, 2015	ORIGINAL APPROVAL
OTHER DETAILS REQUIRED: NONE		
DETAILS APPROVED FOR USE BY HIGHWAY SAFETY & DESIGN		

GUARDRAIL TERMINAL LABEL DETAIL



HIGHWAY SAFETY  
& DESIGN DETAIL  
HSD - 621.06