

STATE OF VERMONT AGENCY OF TRANSPORTATION



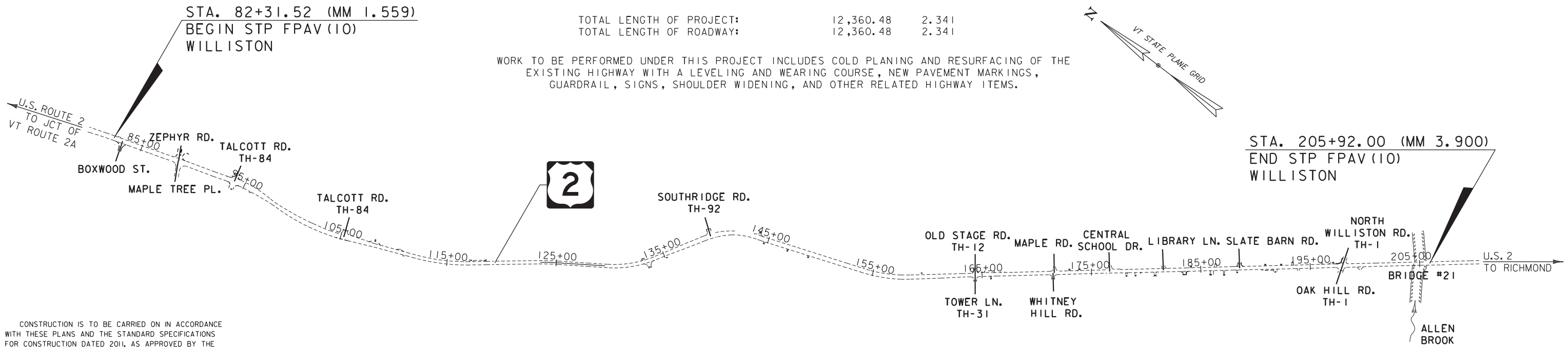
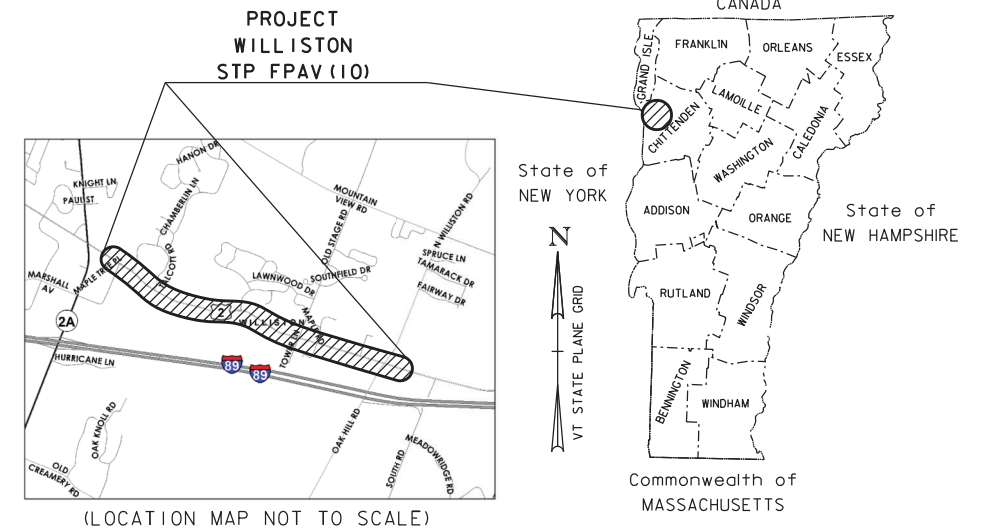
PROPOSED IMPROVEMENT TOWN OF WILLISTON COUNTY OF CHITTENDEN US ROUTE 2 (MINOR ARTERIAL)

BEGINNING IN THE TOWN OF WILLISTON ON US ROUTE 2 AT STA. 82+31.52 (MM 1.559) CONTINUING EASTERLY ALONG US ROUTE 2 FOR A DISTANCE OF 12,360.48 FEET (2.341 MILES) TO STA. 205+92.00 (MM 3.900).

PROJECT DATA:	LENGTH (FEET)	LENGTH (MILES)
TOWN OF WILLISTON		
US ROUTE 2		
STA. 82+31.52 TO STA. 205+92.00	12,360.48	
MM 1.559 TO MM 3.900		2.341

TOTAL LENGTH OF PROJECT:	12,360.48	2.341
TOTAL LENGTH OF ROADWAY:	12,360.48	2.341

WORK TO BE PERFORMED UNDER THIS PROJECT INCLUDES COLD PLANING AND RESURFACING OF THE EXISTING HIGHWAY WITH A LEVELING AND WEARING COURSE, NEW PAVEMENT MARKINGS, GUARDRAIL, SIGNS, SHOULDER WIDENING, AND OTHER RELATED HIGHWAY 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



<p>Stantec Stantec Consulting Services Inc. 55 Green Mountain Drive South Burlington VT U.S.A. 05403 Phone: (802) 864-0223 Fax: (802) 864-0165 www.stantec.com</p>	DIRECTOR OF PROJECT DELIVERY
	APPROVED <u>Wayne Symonds, PE</u> DATE <u>Nov 19, 2018</u>
	PROJECT MANAGER : BRANDON W. KIPP, P.E.
	PROJECT NAME : WILLISTON PROJECT NUMBER : STP FPAV (10)
SHEET 1 OF 48 SHEETS	

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WILLISTON STP FPAV (10)

SUPERPAVE BITUMINOUS CONCRETE PAVEMENT MIXTURE DESIGN CRITERIA	
DESIGN LANE/DESIGN LIFE ESALS	1,554,300
DESIGN NUMBER OF GYRATIONS	65
PERFORMANCE GRADE ASPHALT BINDER	PG 70-28

TRAFFIC DATA-WILLISTON STP FPAV (10)

LOCATION	AADT		DHV		%T		%D		ADTT		ESALS	
	2019	2039	2019	2039	2019	2039	2019	2039	2019	2039	2019-2039	2019-2059
US ROUTE 2												
BEGIN PROJECT TO MAPLE TREE PLACE/SIMON'S PLAZA	11,500	12,500	1,300	1,400	1.8	2.6	55	55	450	710	2,826,000	6,774,000
MAPLE TREE PLACE/SIMON'S PLAZA TO TALCOTT ROAD	13,600	14,800	1,600	1,800	0.8	1.1	63	63	380	600	2,381,000	5,700,000
TALCOTT ROAD TO OLD STAGE ROAD	11,100	12,100	1,300	1,400	1.7	2.4	66	66	360	550	2,320,000	5,536,000
OLD STAGE ROAD TO N. WILLISON ROAD/OAK HILL ROAD	7,300	8,000	860	930	1.9	2.8	59	59	290	460	1,775,000	4,280,000
N. WILLISON ROAD/OAK HILL ROAD TO END PROJECT	3,900	4,300	480	530	2.7	3.8	54	54	250	400	1,579,000	3,806,000

NOT TO SCALE

PROJECT NAME: WILLISTON
PROJECT NUMBER: STP FPAV(10)

FILE NAME: z17v027index.dgn
PROJECT LEADER: G. EDWARDS
DESIGNED BY: G. BURGMEIER
INDEX OF SHEETS

PLOT DATE: 11/20/2018
DRAWN BY: G. BURGMEIER
CHECKED BY: J. LITTLE
SHEET 2 OF 48



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
⊙	IPNF IRON PIN FOUND
●	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 VALVE
⊕	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 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 RADUIS 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

PROJECT DESIGN & LAYOUT 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**

**BOUNDARY LINES**

—————	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)
— L — L —	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**























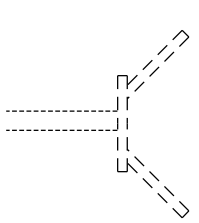




**EXISTING FEATURES**

-----	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: WILLISTON  
PROJECT NUMBER: STP FPAV(10)

FILE NAME: z17v027frm.dgn PLOT DATE: 11/20/2018  
PROJECT LEADER: G. EDWARDS DRAWN BY: D. BARNES  
DESIGNED BY: D. BARNES CHECKED BY: J. LITTLE  
CONVENTIONAL SYMBOLGY LEGEND SHEET SHEET 3 OF 48

### GENERAL LEGEND

-  = EXISTING SEWER MANHOLE
-  = EXISTING DRAINAGE MANHOLE
-  = EXISTING TELEPHONE MANHOLE
-  = TELEPHONE LINE SIGN
-  = GAS PIPE LINE SIGN
-  = EXISTING TRUNCATED DOMES
-  = EXISTING CULVERT FLOW ARROW
-  = EXISTING LUMINAIRE
-  = EXISTING STRAIN POLE/CANTILEVER POLE
-  = EXISTING CONTROLLER CABINET
-  = EXISTING PULLBOX/JUNCTION BOX
-  = EXISTING PEDESTRIAN SIGNAL HEAD
-  = EXISTING SIGNAL HEAD
-  = EXISTING SIGNAL HEAD WITH LOUVERED PLATE
-  = EXISTING CONDUIT (SIGNAL)
-  = EXISTING VEHICLE LOOPS
-  = EXISTING PEDESTAL POST/LIGHTING POLE
-  = EXISTING CANTILEVER
-  = EXISTING SLEEVE
-  = EXISTING PEDESTRIAN PUSHBUTTON ASSEMBLY
-  = EXISTING L.E.D REGULATORY SIGN
-  = EXISTING OVERHEAD SIGN
-  = EXISTING CULVERT AND HEADWALL
-  PROPOSED STONE FILL, TYPE I
-  HELMETED BICYCLIST SYMBOL  
SEE MUTCD 2009 EDITION:  
PART 9, SECTION 9C.04  
PAGE 806 & 809
-  GREEN PAVEMENT MARKINGS - BICYCLE LANE
-  DURABLE CROSSWALK MARKING IMPRINTED/COLORIZED

### SIGN LEGEND

- N = NEW
- R = REMOVE
- R&S = REMOVE & SALVAGE
- S = SALVAGED SIGN
- RET = RETAIN
- B-B = BACK TO BACK
- R[Ⓢ] = REMOVE AND RETURN TO THE TOWN

PROJECT NAME: WILLISTON  
PROJECT NUMBER: STP FPAV(10)

FILE NAME: z17v027frm.dgn	PLOT DATE: 11/20/2018
PROJECT LEADER: G. EDWARDS	DRAWN BY: D. BARNES
DESIGNED BY: D. BARNES	CHECKED BY: J. LITTLE
LEGEND SHEET	SHEET 4 OF 48

## GENERAL NOTES

1. COLD PLANING SHALL BE COMPLETED ACCORDING TO THE TYPICAL SECTIONS OR AS DENOTED OTHERWISE ON THE PLANS. A FULL DEPTH BUTT JOINT SHALL BE CONSTRUCTED AT THE PROJECT BEGIN AND END, AND AT ALL PAVED SIDE ROAD APPROACHES AS SHOWN ON THE PROJECT PLANS OR AS OTHERWISE DIRECTED BY THE ENGINEER. ALL JOINTS SHALL BE SAW CUT, INCIDENTAL TO ITEM 210.10 COLD PLANING, BITUMINOUS CONCRETE PAVEMENT. SEE DETAIL ON SHEET 12.
2. ALL COLD PLANE SURFACES SHALL HAVE SURFACE PREPARATION BEFORE PAVING CONSISTING OF POT HOLE PATCHING AND PATCHING OF ALL LARGE CRACKS THAT EXCEED ONE INCH IN WIDTH. THIS WILL BE PAID UNDER ITEM 900.680 SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT SURFACE PREPARATION, TYPE I) SEE DETAIL ON SHEET 12. THERE IS AN AREA BETWEEN APPROXIMATE STATIONS 107+00 - 111+00 WHERE THE EXISTING PAVEMENT CONDITION MAY WARRANT ADDITIONAL SURFACE PREPARATION AND/OR ADDITIONAL SPOT LEVELING AS DIRECTED BY THE ENGINEER.
3. EMULSIFIED ASPHALT (OPTION ITEM) SHALL BE APPLIED ON EXISTING PAVEMENT SURFACES, BETWEEN ALL COURSES OF PAVEMENT AND ON COLD PLANED SURFACES. ALL COLD PLANED 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.
4. PAVEMENT WILL BE ALTERNATE ITEMS AND PAID UNDER ITEM 406.25 BITUMINOUS CONCRETE PAVEMENT (PG 70-28)(SBS POLYMER) OR ITEM 490.30 SUPERPAVE BITUMINOUS CONCRETE PAVEMENT (PG 70-28)(SBS POLYMER)
5. IF ALTERNATE ITEM 406.25 BITUMINOUS CONCRETE PAVEMENT (PG 70-28)(SBS POLYMER) IS SELECTED, THE WEARING COURSE AND LEVELING COURSE SHALL BE TYPE IV BITUMINOUS CONCRETE PAVEMENT. ALL PG GRADED ASPHALT CEMENT USED IN THE BITUMINOUS CONCRETE PAVEMENT SHALL BE PG 70-28. IF ALTERNATE ITEM 490.30 SUPERPAVE BITUMINOUS CONCRETE PAVEMENT (PG 70-28)(SBS POLYMER) IS SELECTED, THE WEARING COURSE AND LEVELING COURSE SHALL BE TYPE IVS SUPERPAVE BITUMINOUS CONCRETE PAVEMENT. ALL PG GRADED ASPHALT CEMENT USED IN THE SUPERPAVE BITUMINOUS CONCRETE PAVEMENT SHALL BE PG 70-28.
6. ALL BITUMINOUS CONCRETE PAVEMENT TOLERANCE = +/- 1/4 INCH (TOTAL THICKNESS EXCLUDING THE LEVELING COURSE)
7. EDGES OF NEW PAVEMENT WITHIN UNCURBED SECTIONS SHALL INCLUDE A SAFETY EDGE AS DIRECTED BY THE ENGINEER. SEE VTRANS HIGHWAY SAFETY & DESIGN DETAIL HSD-400.01 SAFETY EDGE DETAILS.
8. THE CONTRACTOR SHALL USE CAUTION WHEN COLD PLANING AND PAVING OPERATIONS OCCUR ON BRIDGE DECKS. SHOULD ANY DAMAGE OCCUR TO THE DECK OR MEMBRANE AS A RESULT OF THESE OPERATIONS THE ENGINEER SHALL CONTACT THE VTRANS CONSTRUCTION STRUCTURES ENGINEER TO PROVIDE AN ASSESSMENT OF THE DAMAGE AND RECOMMEND ANY NECESSARY REPAIRS. THE CONSTRUCTION STRUCTURES ENGINEER WILL ALSO DETERMINE IF THE DAMAGE WAS AVOIDABLE. IF THE CONTRACTOR IS DETERMINED BY THE ENGINEER TO BE AT FAULT, THE RECOMMENDED REPAIRS SHALL BE COMPLETED AT NO COST TO THE STATE.
9. ALL RESIDENTIAL AND COMMERCIAL DRIVES SHALL RECEIVE A FOUR FOOT PAVED APRON, AND ALL FIELD DRIVES SHALL RECEIVE A TWO FOOT PAVED APRON. PAYMENT WILL BE MADE UNDER ITEM 900.675 SPECIAL PROVISION (HAND-PLACED BITUMINOUS CONCRETE MATERIAL, DRIVES) UNLESS OTHERWISE DIRECTED BY THE ENGINEER (FOR DETAILS, SEE SHEET 9). ALL OTHER BITUMINOUS MATERIALS PLACED WITHIN THE PROJECT LIMITS WHETHER BY HAND OR MECHANICAL METHODS SHALL BE PAID AS ALTERNATE ITEMS 406.25 BITUMINOUS CONCRETE PAVEMENT (PG 70-28)(SBS POLYMER) OR 490.30 SUPERPAVE BITUMINOUS CONCRETE PAVEMENT (PG 70-28)(SBS POLYMER).

## GENERAL NOTES (CONT.)

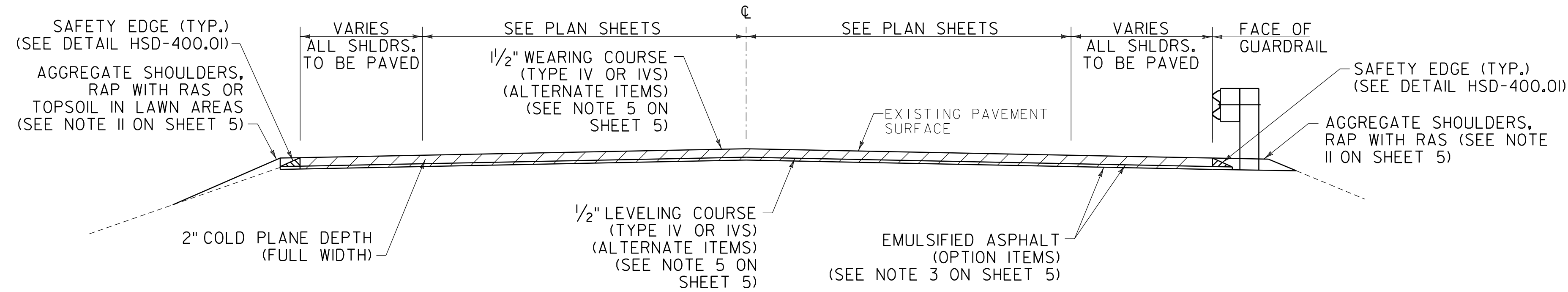
10. SIDEWALK RAMP DETECTABLE WARNING SURFACES SHALL BE TRUNCATED DOME DETECTABLE WARNING PLATES FROM THE VAOT'S APPROVED PRODUCT LIST.
11. ITEM 900.680 SPECIAL PROVISION (AGGREGATE SHOULDERS, RAP WITH RAS) SHALL BE USED TO BACK UP EDGES OF PAVEMENT, EXCEPT IN LAWN AREAS WHERE ITEM 651.35 TOPSOIL SHALL BE USED.
12. AN ESTIMATED QUANTITY OF ITEM 608.25, ALL PURPOSE EXCAVATOR RENTAL, TYPE I HAS BEEN INCLUDED FOR THE EXCAVATION OF UNPAVED SHOULDERS AND REMOVING BUILT UP SAND, ETC. ADJACENT TO THE SHOULDERS IN NON GUARDRAIL AREAS, TO ALLOW FREE DRAINAGE OFF THE SHOULDER.
13. ALL WORK SHALL BE PERFORMED WITHIN THE STATE RIGHT OF WAY AND CURRENT EASEMENTS.
14. 3' - 7" OF BACKING IS REQUIRED BEHIND THE FACE OF GUARDRAIL WITH SIX FOOT POSTS.
15. ESTIMATED QUANTITIES OF ITEMS 608.25 ALL PURPOSE EXCAVATOR RENTAL, TYPE I, ITEM 608.37 TRUCK RENTAL AND ITEM 608.40 LOADER RENTAL, TYPE I HAVE BEEN INCLUDED FOR THE PROVISION OF CONSTRUCTING GUARDRAIL END TERMINAL FLARES WITH EXCAVATED DITCHING MATERIAL. AN ESTIMATED QUANTITY OF ITEM 203.30 EARTH BORROW HAS BEEN INCLUDED IN THE CASE THAT THE DITCHING MATERIAL IS NOT SUITABLE TO USE IN THE GUARDRAIL END TERMINAL FLARE AREA. THE AMOUNT OF 25 CUBIC YARDS OF EARTH BORROW HAS BEEN ESTIMATED FOR EACH NEW GUARDRAIL END TERMINAL FLARE. ITEM 653.20 TEMPORARY EROSION MATTING SHALL BE PLACED ON ALL SLOPES CREATED BY THE GUARDRAIL END TERMINAL FLARE. THE QUANTITIES INCLUDED REFLECT 25 SY OF ITEM 653.20 TEMPORARY EROSION MATTING FOR EACH NEW GUARDRAIL END TERMINAL FLARE TO BE USED AS DIRECTED BY THE ENGINEER. PRIOR TO THE PLACEMENT OF TEMPORARY EROSION MATTING, THE AREA SHALL RECEIVE TOPSOIL AND SEED USING ITEM 651.35, TOPSOIL AND ITEM 651.15 SEED.
16. DAMAGE INFLICTED BY THE CONTRACTOR TO ANY DROP INLETS, CROSS CULVERTS OR OTHER DRAINAGE FEATURES IS THE LIABILITY OF THE CONTRACTOR AND SHALL BE REPAIRED OR REPLACED AS DIRECTED BY THE ENGINEER AT NO ADDITIONAL COST TO THE STATE.
17. ITEM 613.10 STONE FILL, TYPE I, ITEM 651.40 GRUBBING MATERIAL (6"), ITEM 653.20 TEMPORARY EROSION MATTING, AND ITEM 608.25 ALL PURPOSE EXCAVATOR RENTAL, TYPE I HAVE BEEN INCLUDED FOR SLOPE EROSION PREVENTION AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. THE LATEST VERSION OF THE "LOW RISK SITE HANDBOOK FOR EPSC" SHALL BE USED FOR EPSC PRACTICES.
18. A QUANTITY HAS BEEN INCLUDED FOR ITEM 617.10 RELOCATE MAILBOX, SINGLE SUPPORT TO BE USED AS DETERMINED BY THE ENGINEER.
19. WHEN FINISHED GRADE HAS BEEN MET, THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL SIGNS BEING RETAINED ARE IN CONFORMANCE WITH VTRANS STANDARDS E-121 & T-56 AS DIRECTED BY THE ENGINEER. PAYMENT MADE UNDER ITEMS 675.341 AND 675.50.



PROJECT NAME: WILLISTON  
PROJECT NUMBER: STP FPAV(10)

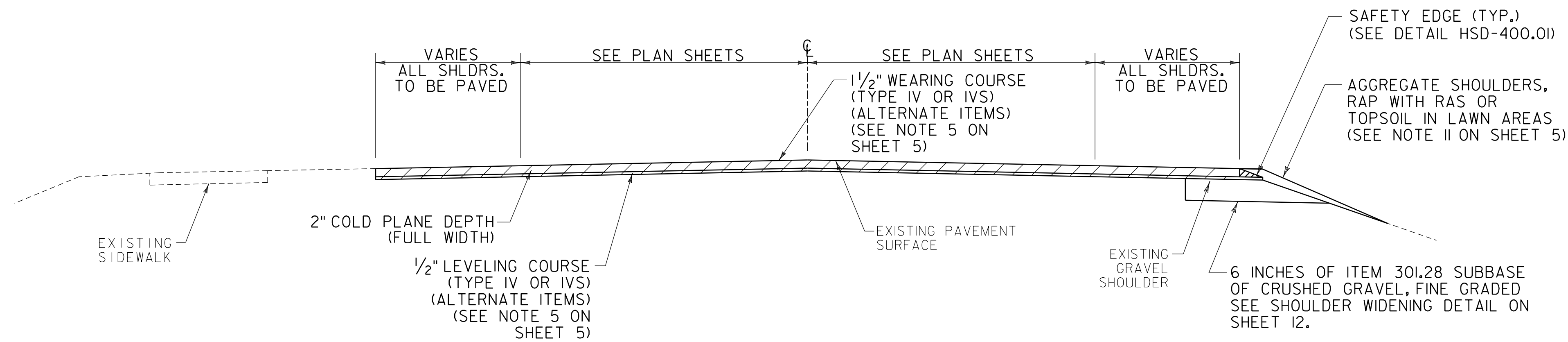
FILE NAME: z17v027+yp.dgn  
PROJECT LEADER: G. EDWARDS  
DESIGNED BY: G. MERKLE  
GENERAL NOTES SHEET

PLOT DATE: 11/20/2018  
DRAWN BY: G. MERKLE  
CHECKED BY: J. LITTLE  
SHEET 5 OF 48



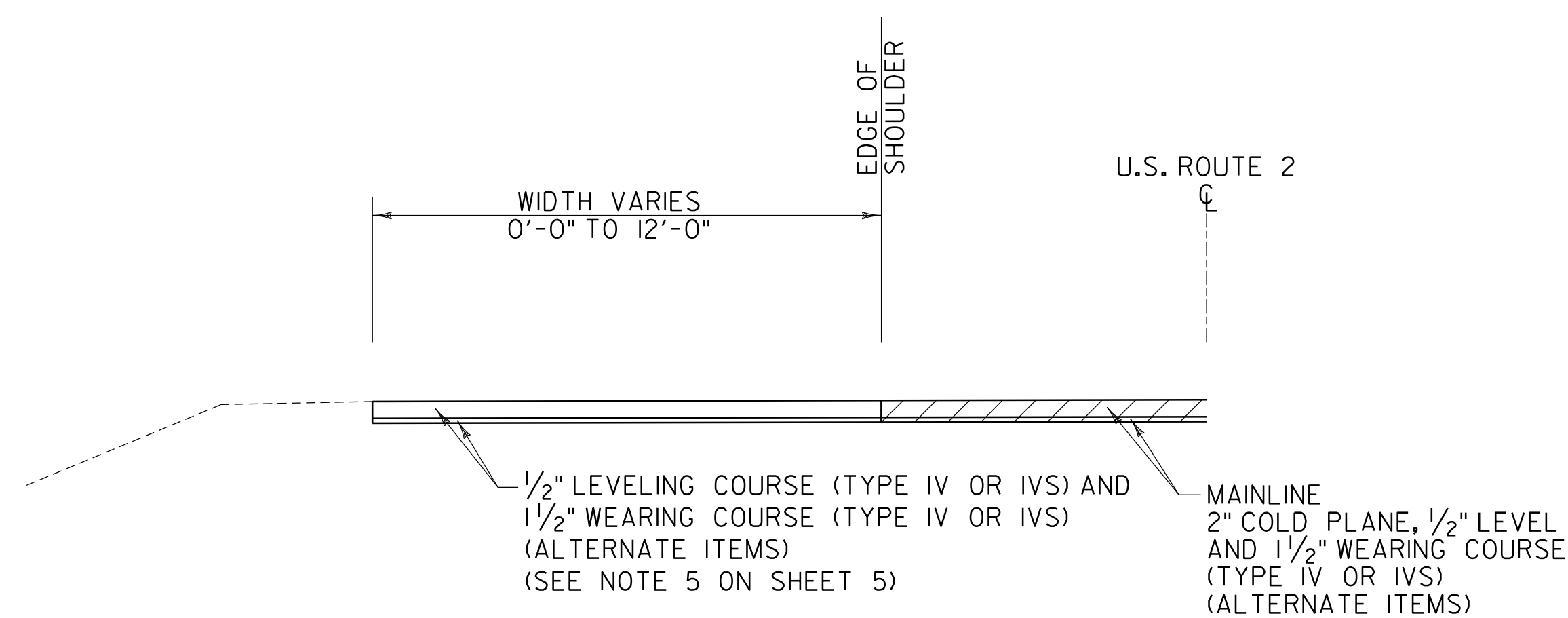
**COLD PLANE TYPICAL SECTION - NON-CURBED**

STA. 82+31.52 TO 87+56  
STA. 93+75 TO 142+00



**COLD PLANE TYPICAL SECTION - NON-CURBED W/SIDEWALK**

STA. 87+56 TO 93+75  
STA. 163+22 TO 205+92.00



**PAVED PULL-OFF DETAIL**

STA. 110+15 TO 110+98, LT

PAVED PULL-OFF  
NOTES:

1. GRADE EXISTING GRAVEL PULL-OFF AS NECESSARY TO PROVIDE A SMOOTH SURFACE AND ADEQUATE DRAINAGE AS DIRECTED BY THE ENGINEER. PAYMENT SHALL BE MADE UNDER ITEM 608.15 POWER GRADER RENTAL. ANY EXCAVATION REQUIRED, SHALL BE PAID FOR USING THE APPROPRIATE RENTAL ITEMS.
2. THE PULL-OFF WILL BE MACHINE PAVED AND PAID UNDER ALTERNATE ITEMS 406.25 BITUMINOUS CONCRETE PAVEMENT (PG 70-28)(SBS POLYMER) OR 490.30 SUPERPAVE BITUMINOUS CONCRETE PAVEMENT (PG 70-28)(SBS POLYMER).

NOT TO SCALE

PROJECT NAME: WILLISTON  
PROJECT NUMBER: STP FPAV(10)

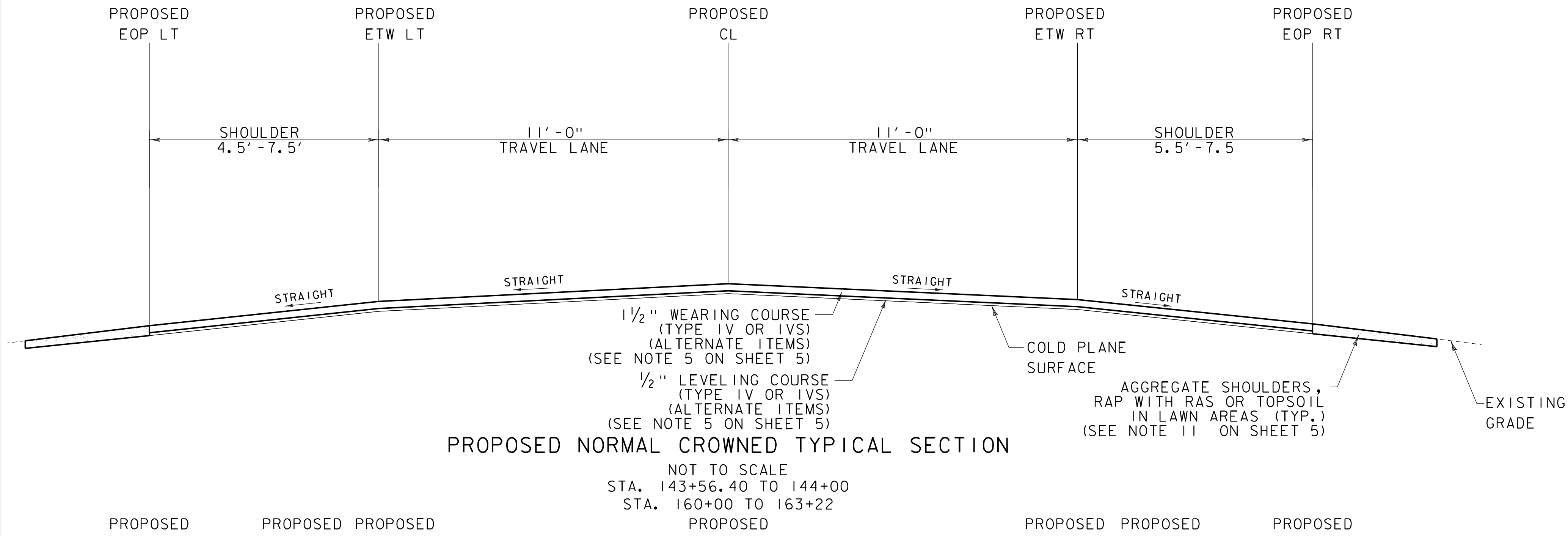
FILE NAME: z17v027+yp.dgn  
PROJECT LEADER: G. EDWARDS  
DESIGNED BY: G. MERKLE  
TYPICAL SECTION SHEET

PLOT DATE: 11/20/2018  
DRAWN BY: G. MERKLE  
CHECKED BY: J. LITTLE  
SHEET 6 OF 48



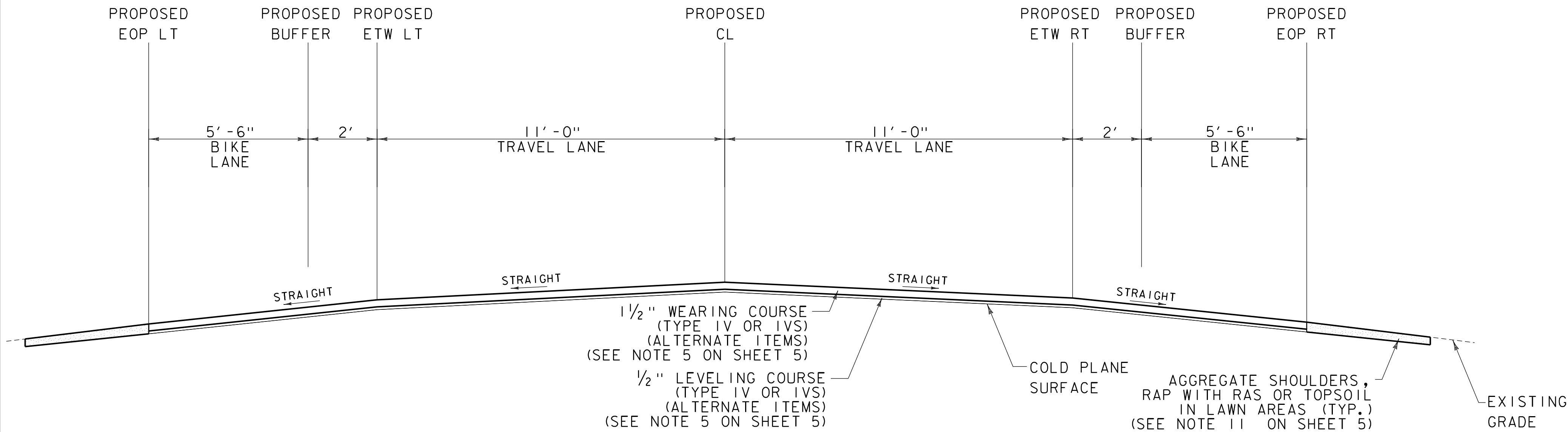


CONSTRUCTION DETAILS FOR 3-LANE RECONFIGURATION TO 2-LANE WITH BIKE LANE AND BUFFER  
STA 142+00 TO 163+22



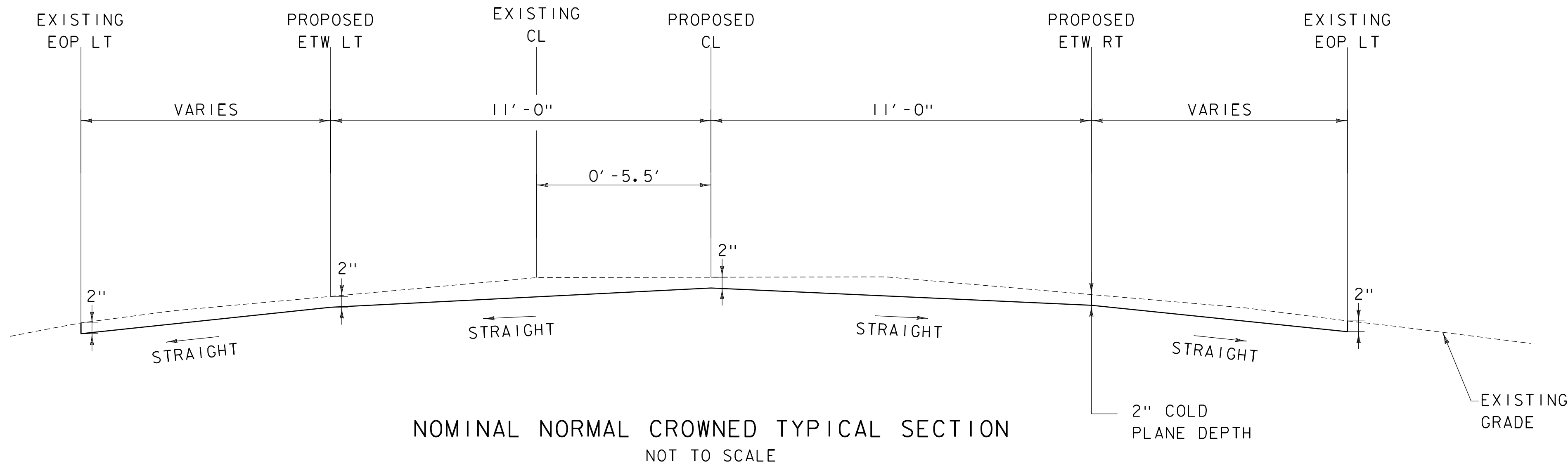
PROPOSED NORMAL CROWNED TYPICAL SECTION

NOT TO SCALE  
STA. 143+56.40 TO 144+00  
STA. 160+00 TO 163+22



PROPOSED NORMAL CROWNED TYPICAL SECTION-BIKE LANE & BUFFER

NOT TO SCALE  
STA. 144+00.00 TO 155+36.64  
STA. 157+40.30 TO 160+00



NOMINAL NORMAL CROWNED TYPICAL SECTION  
NOT TO SCALE

Climbing Lane Remodel HGL

Element	Point Type	Station	Northing	Easting	Radius	Length	Delta / Theta	Rotation Direction	e	Design Speed
Tangent	POB	136+48.99	708659.967	1486288.201						
	PC	138+46.27	708690.941	1486483.032						
Arc	PI	141+13.81	708732.948	1486747.262	685	510.13	42°40'10.00"	Right		
	CC		708014.436	1486590.582						
	PT	143+56.40	708584.748	1486970.016						
	PC	149+96.06	708230.429	1487502.577						
Tangent	PC	149+96.06	708230.429	1487502.577	19000	50.6	0°09'09.26"	Right		
	PI	150+21.36	708216.417	1487523.639						
	CC		692411.577	1476978.134						
	PT	150+46.65	708202.348	1487544.663						
Tangent	PT	150+46.65	708202.348	1487544.663	600	203.66	19°26'51.90"	Left		
	PC	155+36.64	707929.851	1487951.887						
	PI	156+39.46	707872.671	1488037.337						
	CC		708428.507	1488285.567						
Tangent	PT	157+40.30	707847.204	1488136.951	8000	125.71	0°54'01.18"	Right		
	PC	160+77.12	707763.775	1488463.278						
	PI	161+39.97	707748.206	1488524.175						
	CC		700013.067	1486481.732						
Tangent	PT	162+02.83	707731.682	1488584.820						
	PC	160+77.12	707763.775	1488463.278						
	POE	164+38.67	707669.683	1488812.366						

NOTE:

- COLD PLANING DEPTHS BETWEEN 2" CUT POINTS MAY VARY DUE TO LOCATION OF EXISTING CROWN. PAYMENT FOR WORK SHALL BE INCIDENTAL TO ITEM 210.10.

NOT TO SCALE

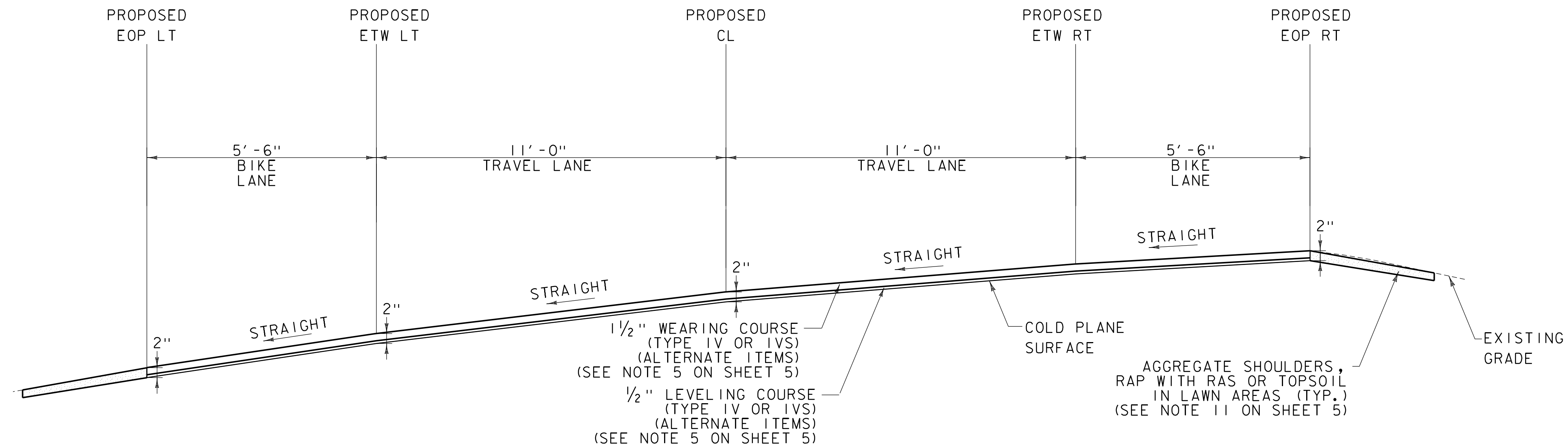
PROJECT NAME: WILLISTON  
PROJECT NUMBER: STP FPAV(10)

FILE NAME: z17v027det-2.dgn  
PROJECT LEADER: G. EDWARDS  
DESIGNED BY: D. BARNES  
CLIMBING LANE RECONFIGURATION SHEET 1

PLOT DATE: 11/20/2018  
DRAWN BY: D. BARNES  
CHECKED BY: J. LITTLE  
SHEET 7 OF 48

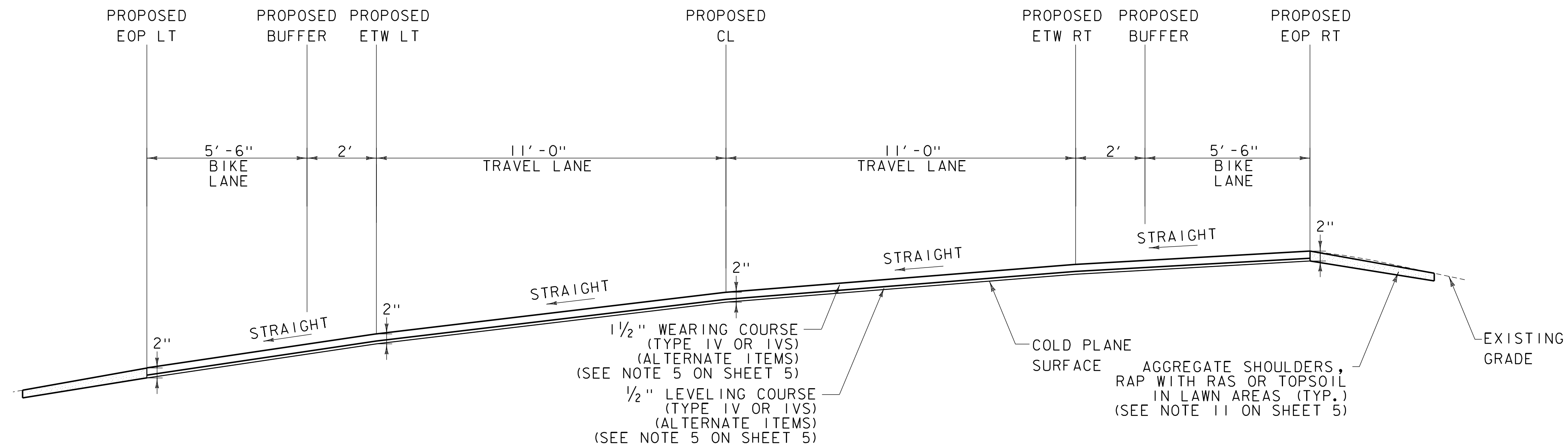


CONSTRUCTION DETAILS FOR 3-LANE RECONFIGURATION TO 2-LANE WITH BIKE LANE AND BUFFER  
STA 142+00 TO 163+22



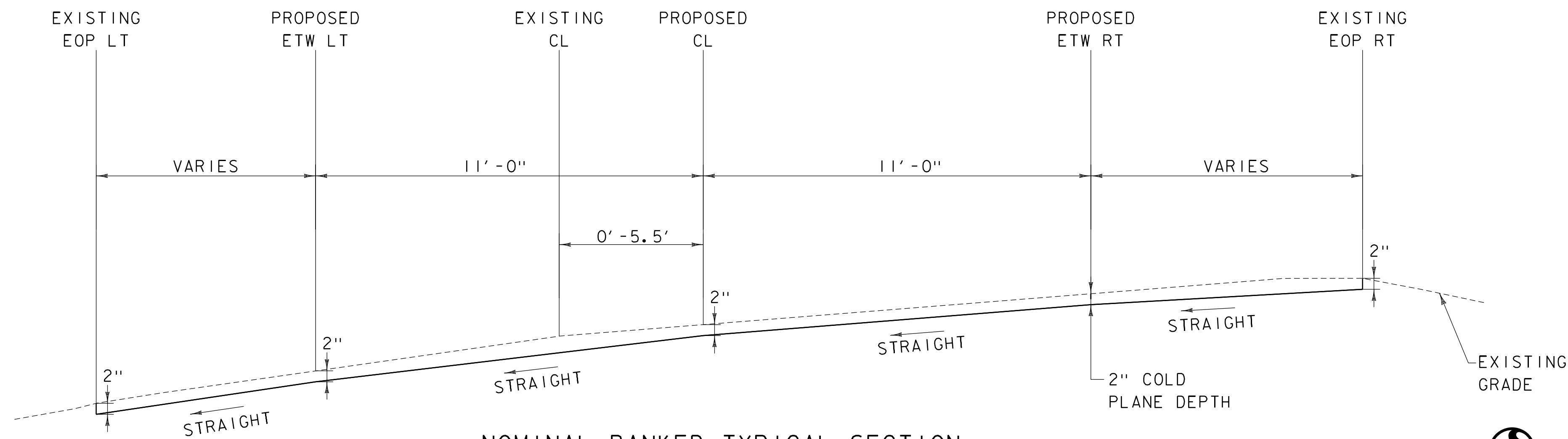
NOMINAL BANKED TYPICAL SECTION

NOT TO SCALE  
STA. 142+00 TO 143+56.40



NOMINAL BANKED TYPICAL SECTION-BIKE LANE & BUFFER

NOT TO SCALE  
STA. 155+36.64 TO 157+40.30



NOMINAL BANKED TYPICAL SECTION

NOT TO SCALE

NOT TO SCALE

PROJECT NAME: WILLISTON  
PROJECT NUMBER: STP FPAV(10)

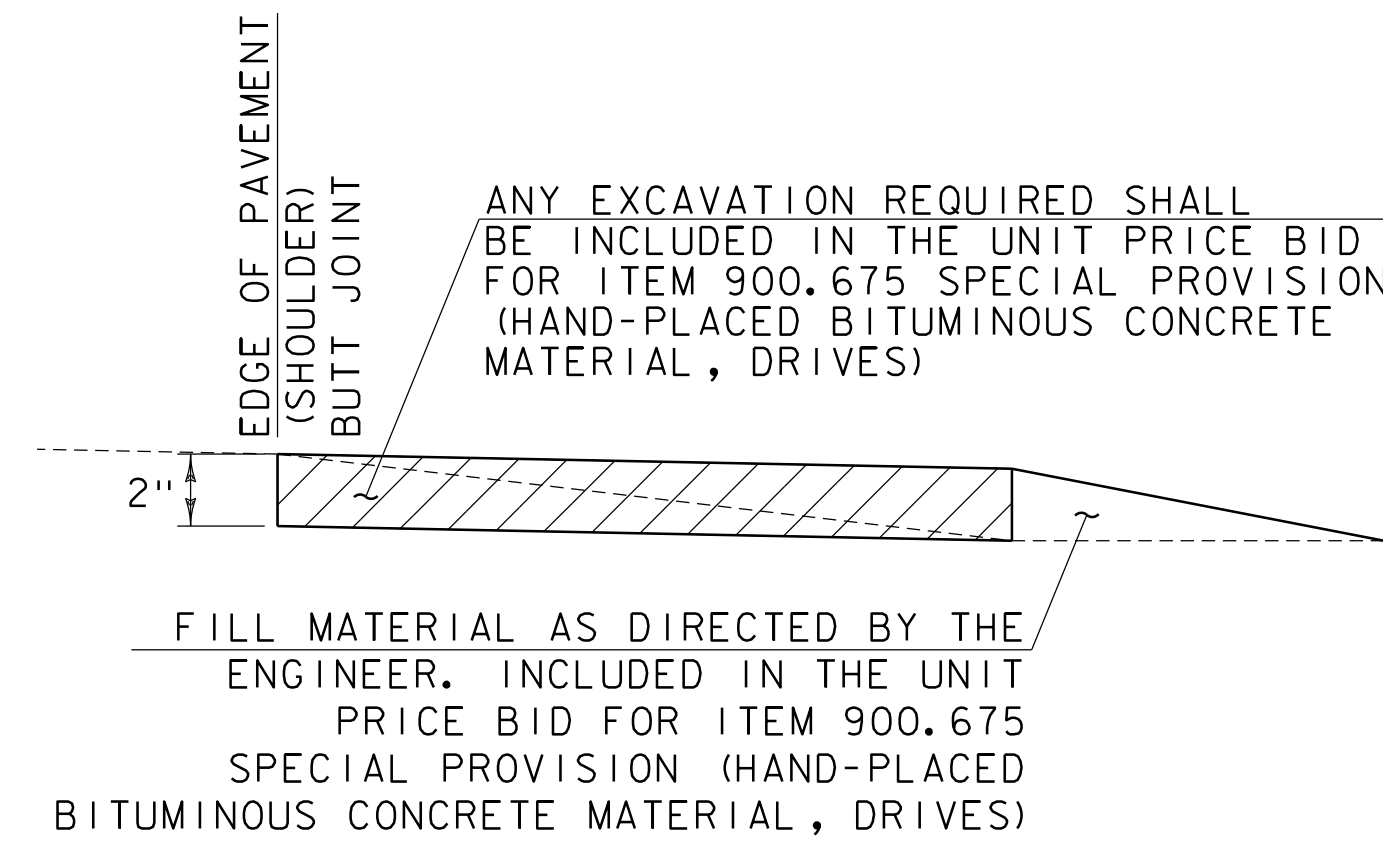
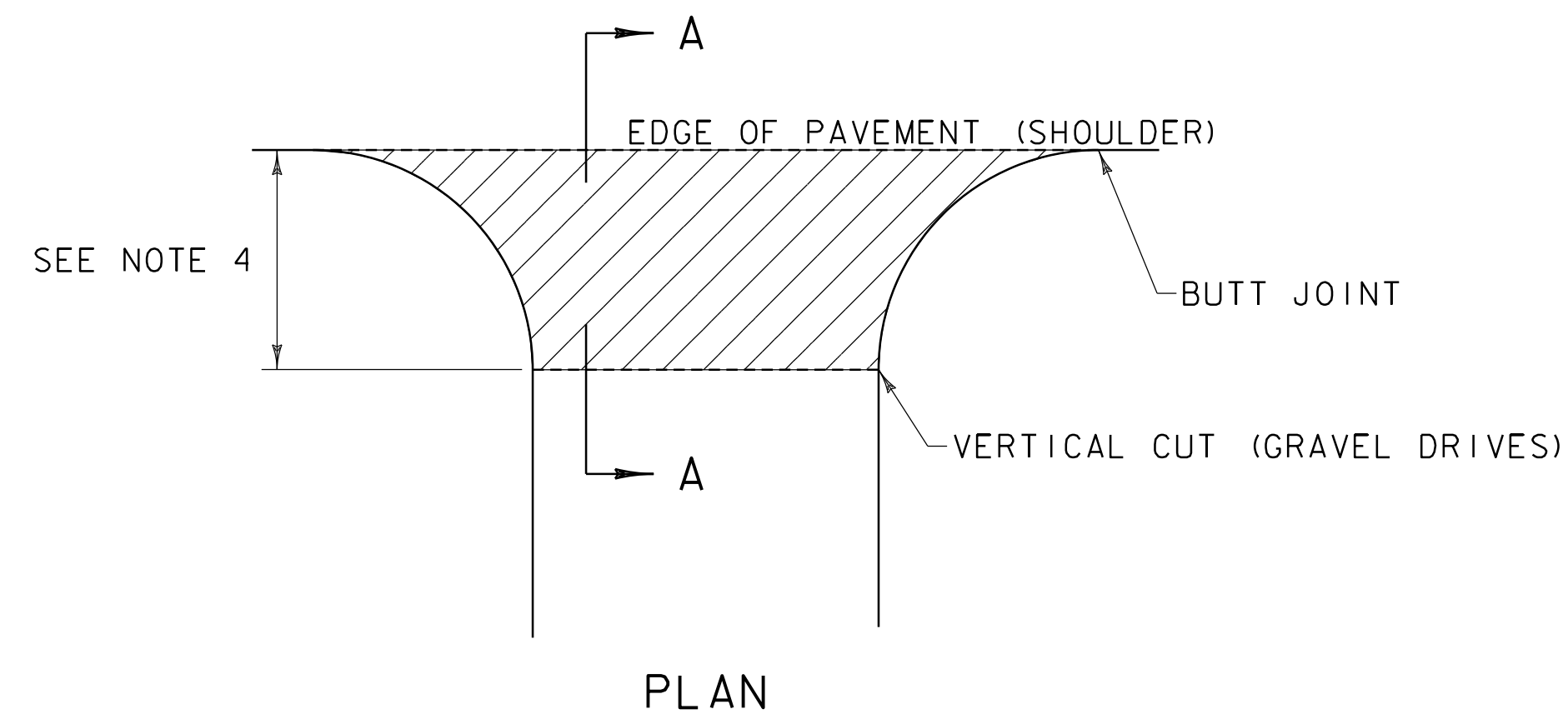
FILE NAME: z17v027det-2.dgn  
PROJECT LEADER: G. EDWARDS  
DESIGNED BY: D. BARNES  
CLIMBING LANE RECONFIGURATION SHEET 2

PLOT DATE: 11/20/2018  
DRAWN BY: D. BARNES  
CHECKED BY: J. LITTLE  
SHEET 8 OF 48

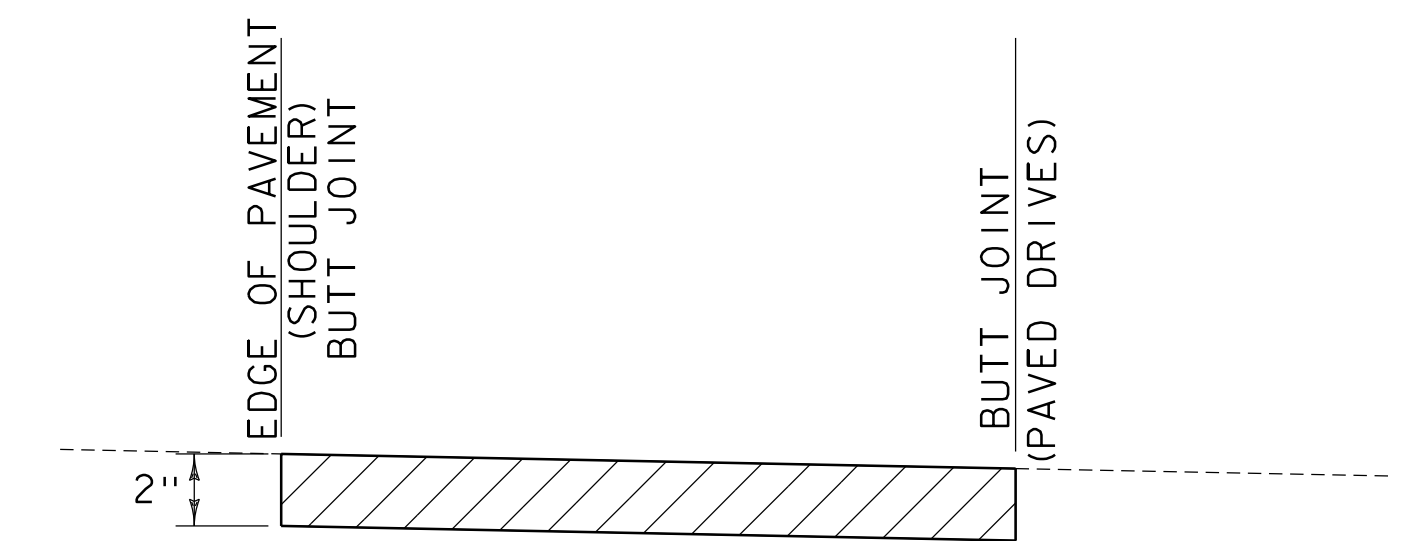
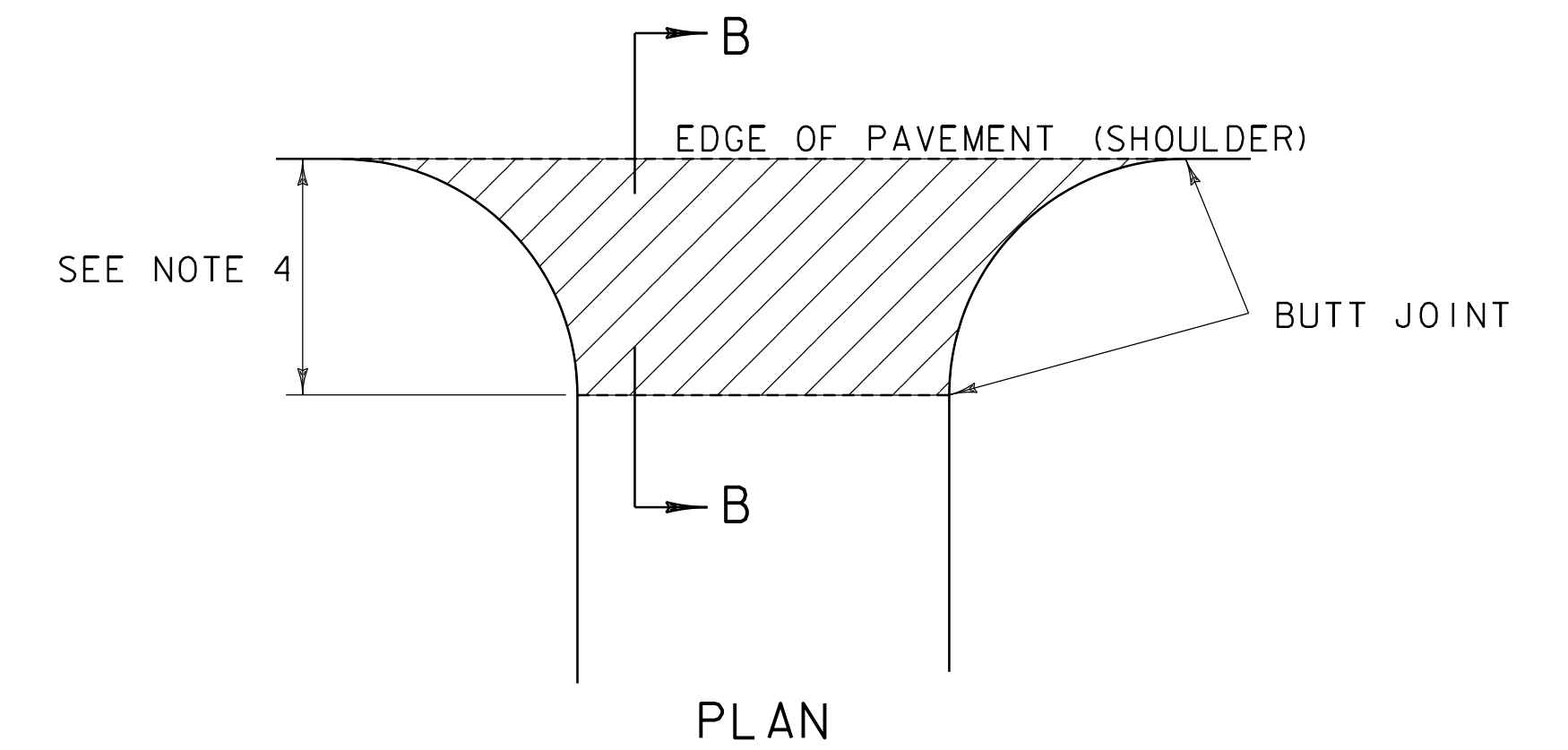




STATION	POSITION	QUANTITY (SY)
US ROUTE 2		
WILLISTON		
82+64	LT	17
93+95	RT	59
95+74	RT	9
108+18	LT	67
111+00	RT	5
114+34	RT	61
117+23	LT	25
118+50	LT	14
124+35	RT	10
124+79	RT	5
124+83	LT	8
131+49	LT	26
133+03	LT	19
133+44	RT	53
134+31	RT	13
135+18	RT	10
136+12	RT	9
144+08	LT	40
144+69	RT	15
146+94	RT	13
148+91	RT	17
159+49	LT	32
165+70	LT	64
165+80	RT	10
166+59	RT	9
166+81	LT	13
167+00	LT	13
167+98	RT	18
169+74	RT	9
169+74	LT	10
172+99	LT	10
173+91	LT	19
174+46	RT	10
175+55	LT	10
176+93	RT	10
177+42	RT	10
178+20	RT	11
179+23	RT	36
180+81	RT	15
183+50	RT	44
184+11	LT	10
186+00	RT	22
186+36	LT	17
187+11	RT	15
188+31	RT	9
189+57	RT	9
190+44	RT	7
190+80	RT	7
190+90	LT	11
191+81	RT	3
192+34	LT	9
193+40	LT	13
193+90	RT	14
196+07	LT	9
197+06	LT	44
199+36	RT	11
199+74	RT	13
200+48	RT	10
201+12	LT	11
202+00	RT	10
202+39	LT	17
202+58	RT	10
203+25	RT	18
205+71	LT	23
SUBTOTAL		1170
ROUNDING		30
TOTAL		1200



SECTION A-A  
HANDWORK DETAILS FOR GRAVEL DRIVES

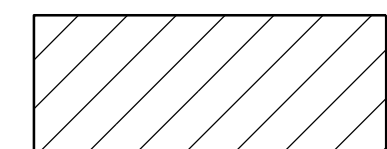


SECTION B-B  
HANDWORK DETAIL FOR PAVED DRIVES

**NOTES:**

- PAVING DEPTH SHALL BE A MINIMUM OF 1½" AND A MAXIMUM OF TWO INCH.
- THE COST OF PROVIDING AND PLACING SUBBASE MATERIAL, CLEANING EXISTING PAVED SURFACES, INCLUDING POWER EQUIPMENT, AND FOR FILLING JOINTS, CRACKS AND HOLES WILL NOT BE PAID DIRECTLY BUT WILL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 900.675 SPECIAL PROVISION (HAND-PLACED BITUMINOUS CONCRETE MATERIAL, DRIVES).
- EXCAVATION NEEDED TO ACHIEVE PROPER DRIVE SLOPES WILL NOT BE PAID DIRECTLY BUT WILL BE CONSIDERED INCIDENTAL TO CONTRACT ITEM 900.675 SPECIAL PROVISION (HAND-PLACED BITUMINOUS CONCRETE MATERIAL, DRIVES).
- FIELD DRIVES 2'-0" (MIN.); RESIDENTIAL AND COMMERCIAL DRIVES 4'-0" (MIN.); OR TO SIDEWALK AS DIRECTED BY THE ENGINEER.

**LEGEND**



ITEM 900.675 SPECIAL PROVISION (HAND-PLACED BITUMINOUS CONCRETE MATERIAL, DRIVES)



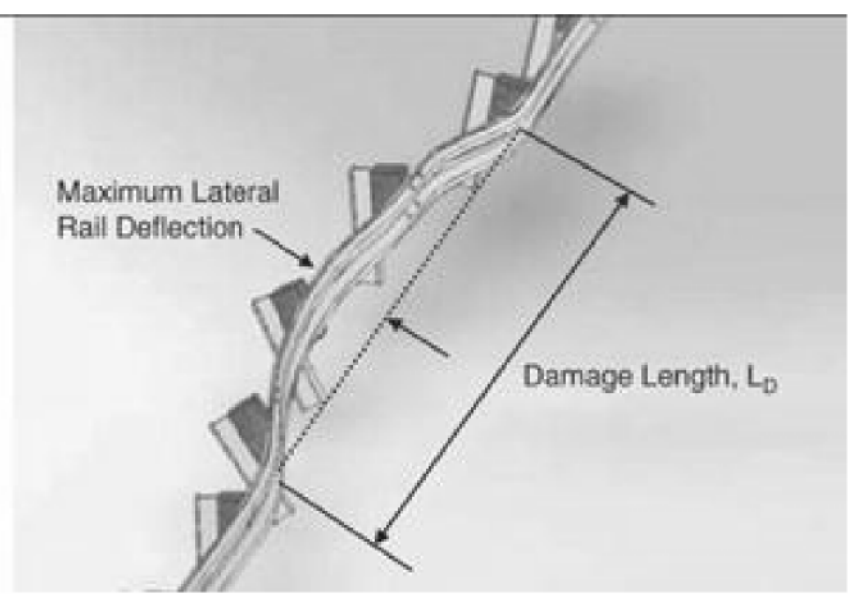
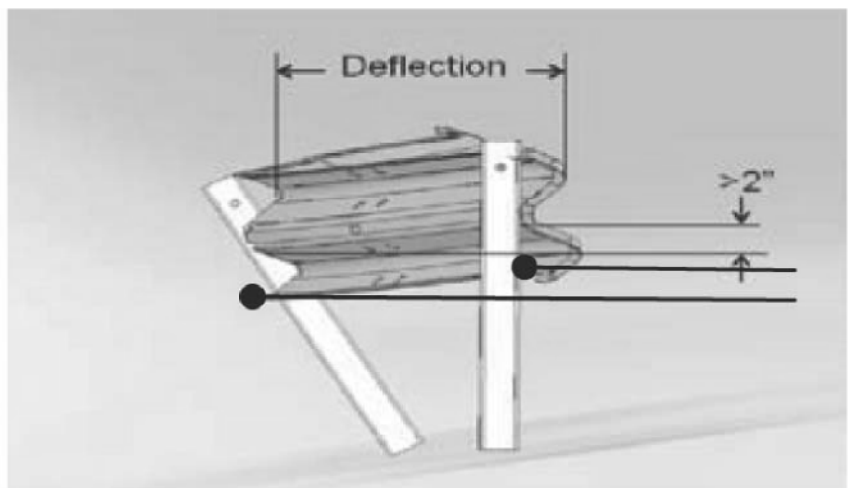
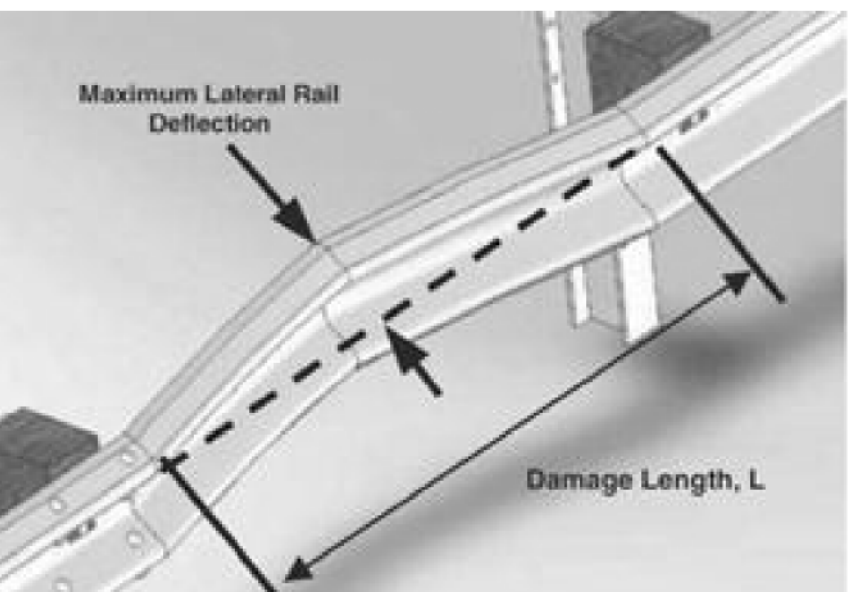
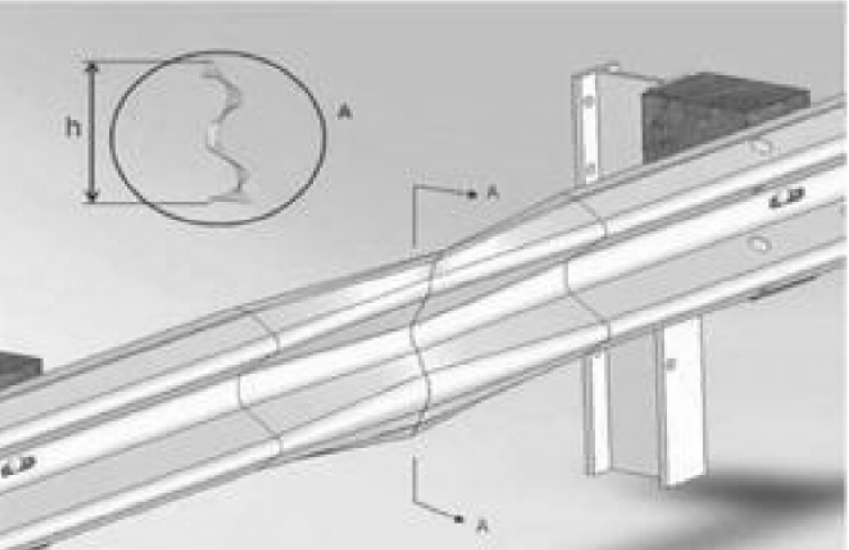
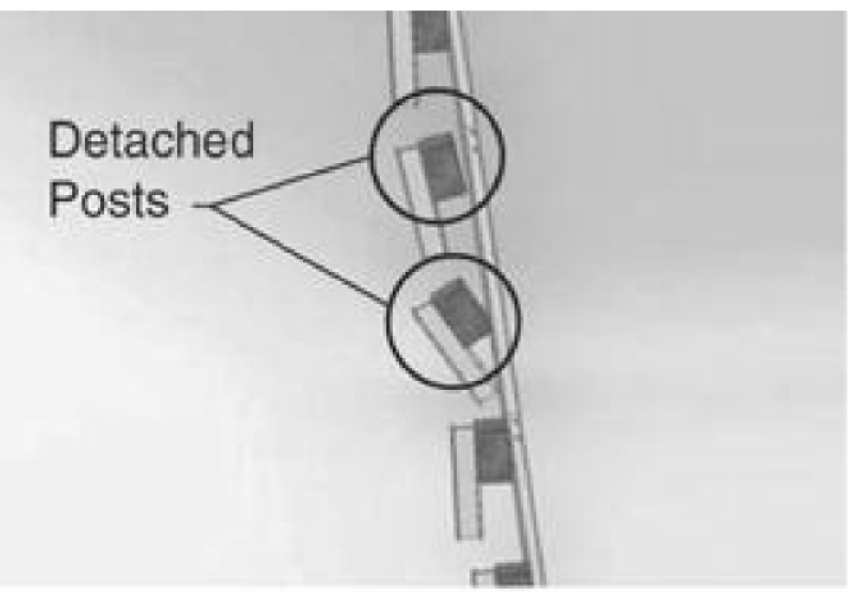
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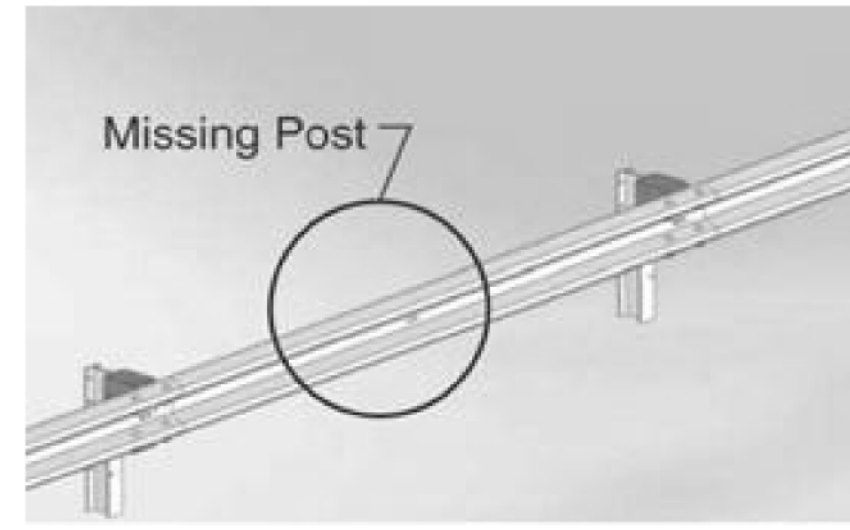
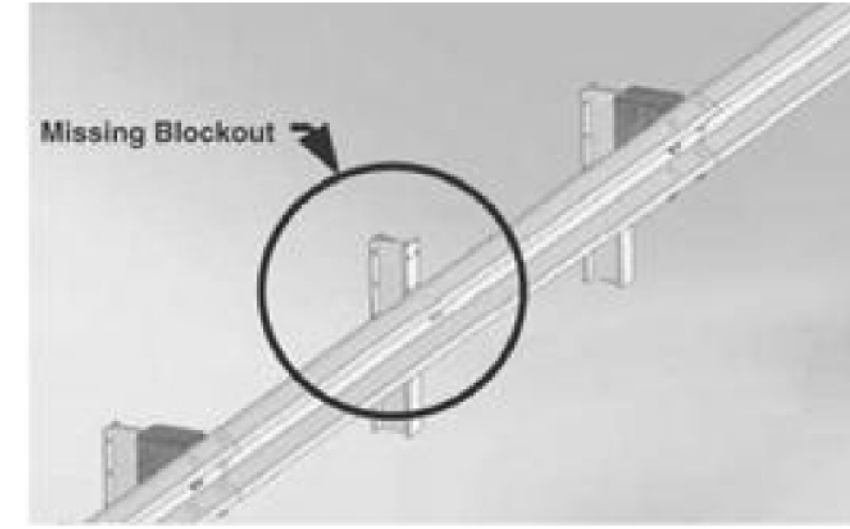
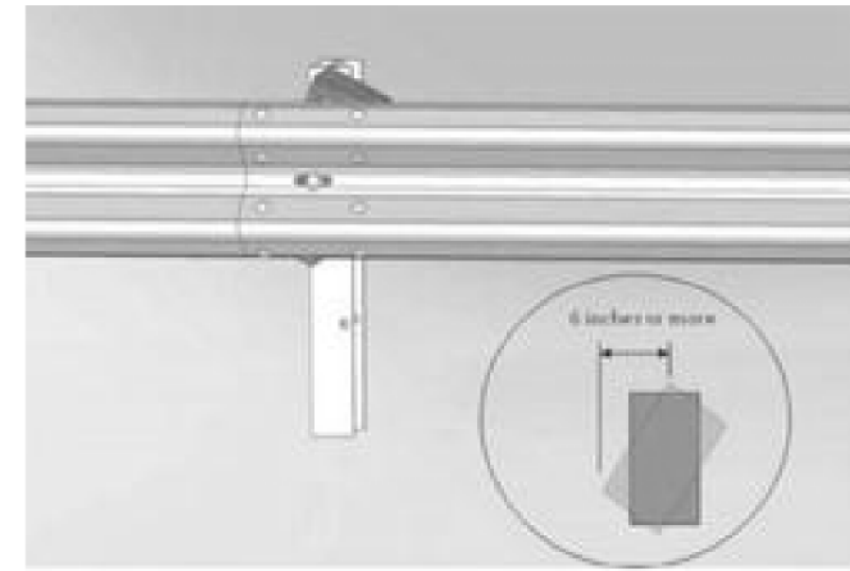

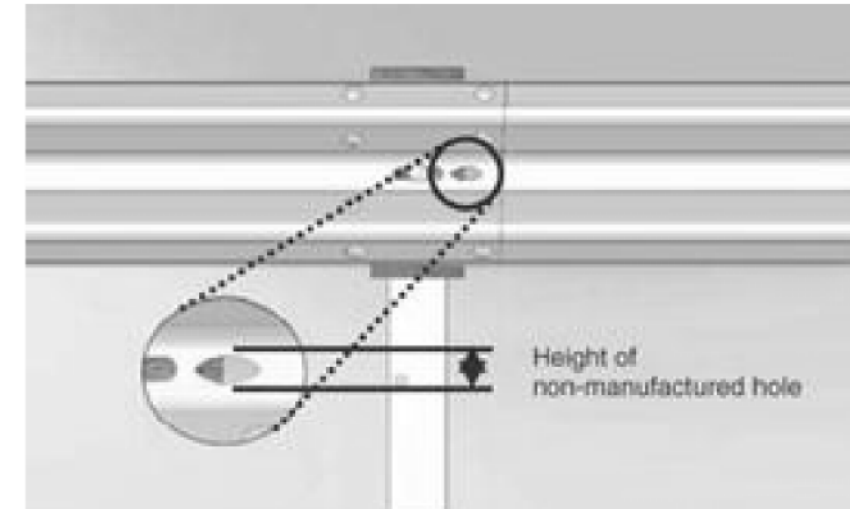
PROJECT NAME: WILLISTON  
PROJECT NUMBER: STP FPAV(10)

FILE NAME: z17v027detail.dgn  
PROJECT LEADER: G. EDWARDS  
DESIGNED BY: G. MERKLE  
DRIVE DETAIL SHEET

PLOT DATE: 11/20/2018  
DRAWN BY: G. MERKLE  
CHECKED BY: J. LITTLE  
SHEET 9 OF 48

**GUARDRAIL REPLACEMENT GUIDELINES**

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 RAILTOP 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 OR 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> </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 COOPERATIVE HIGHWAY RESEARCH PROGRAM (NCHRP) REPORT 656, "CRITERIA FOR RESTORATION OF LONGITUDINAL BARRIERS", COPYRIGHT 2010.

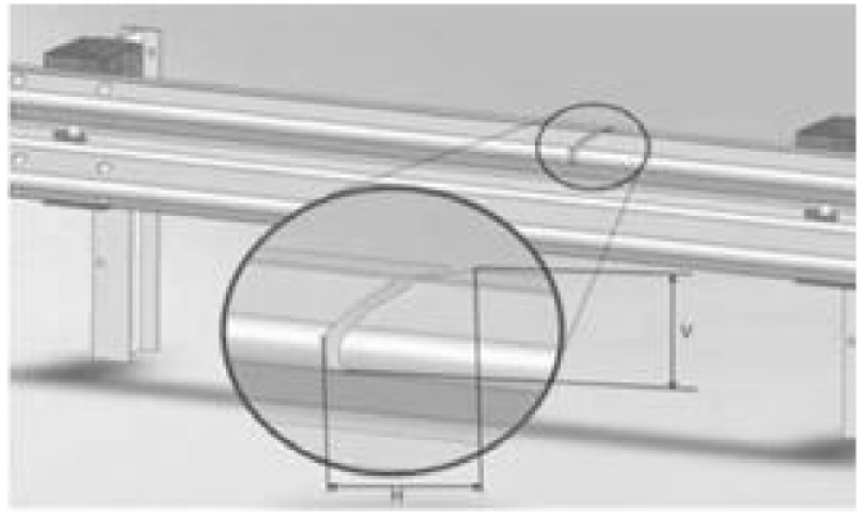
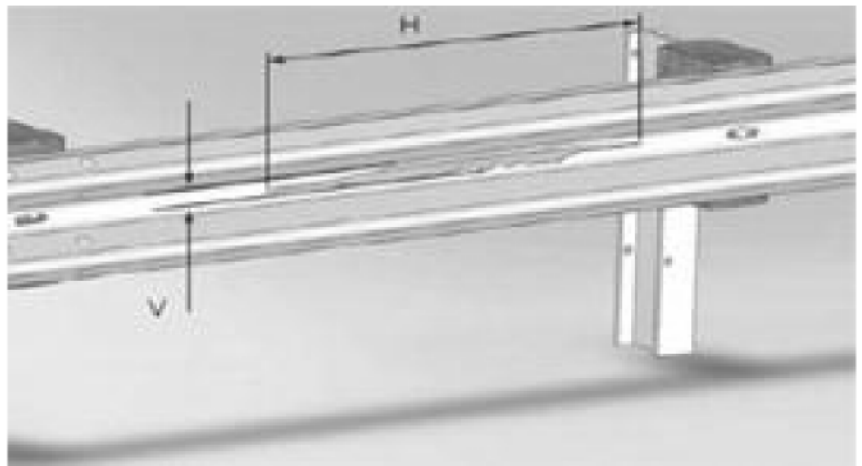
PROJECT NAME: WILLISTON  
PROJECT NUMBER: STP FPAV(10)


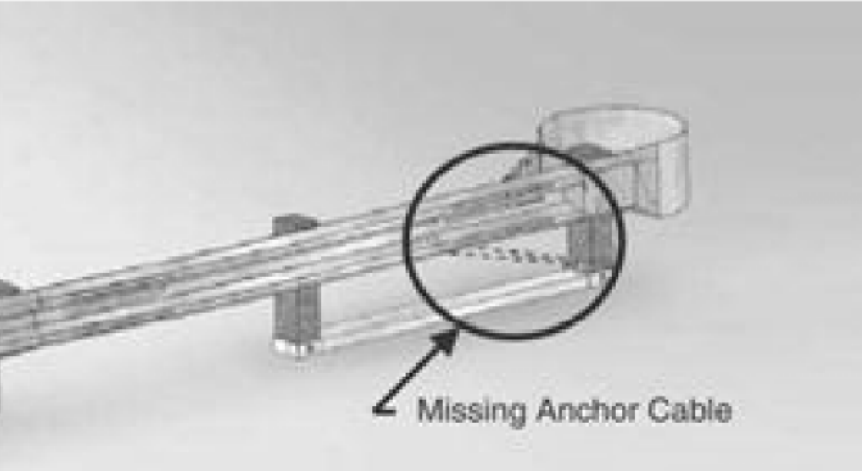
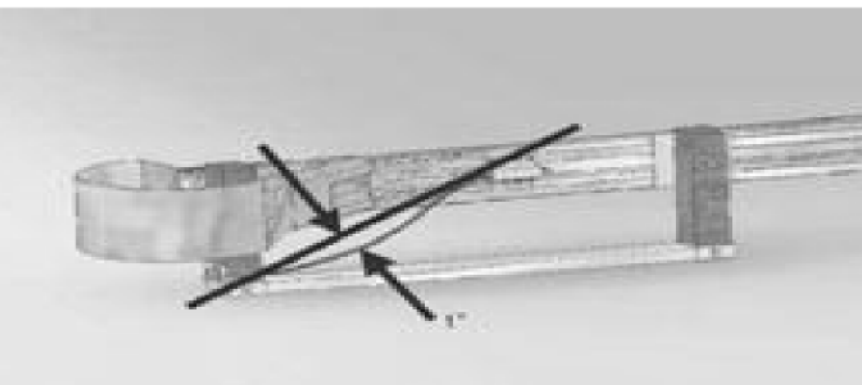
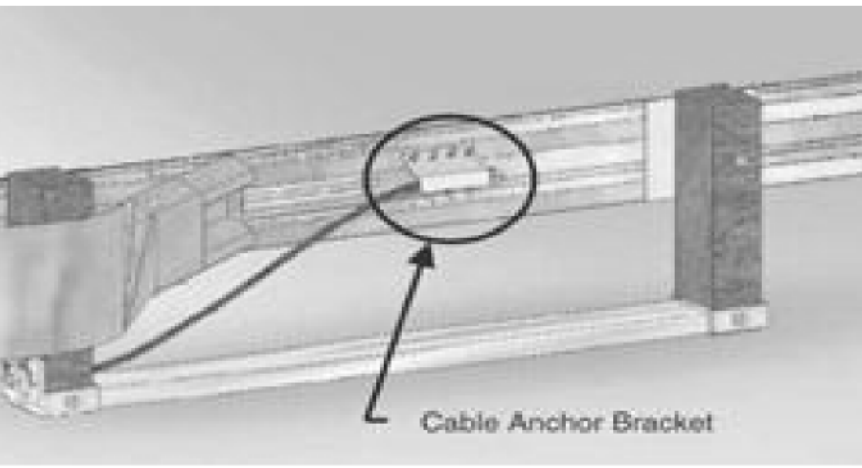
FILE NAME: z17v027detail.dgn  
PROJECT LEADER: G. EDWARDS  
DESIGNED BY: G. BURGMEIER  
GUARDRAIL DETAIL SHEET 1

PLOT DATE: 11/20/2018  
DRAWN BY: G. MERKLE  
CHECKED BY: J. LITTLE  
SHEET 10 OF 48




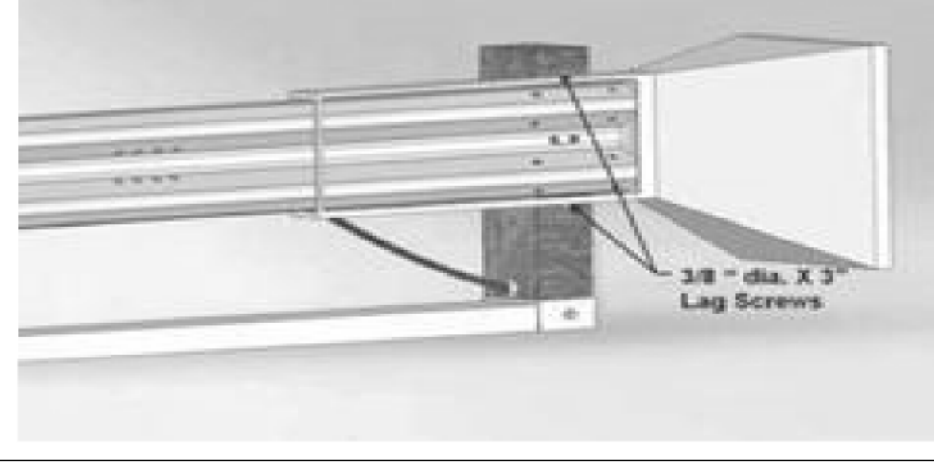
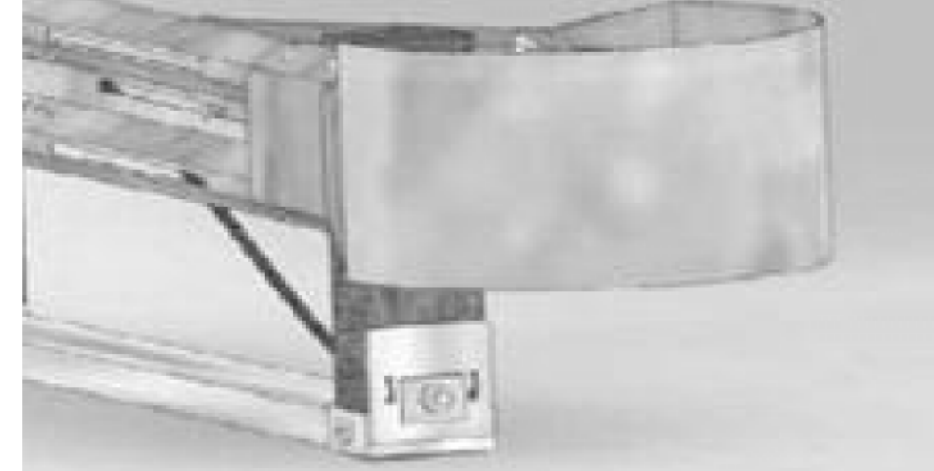
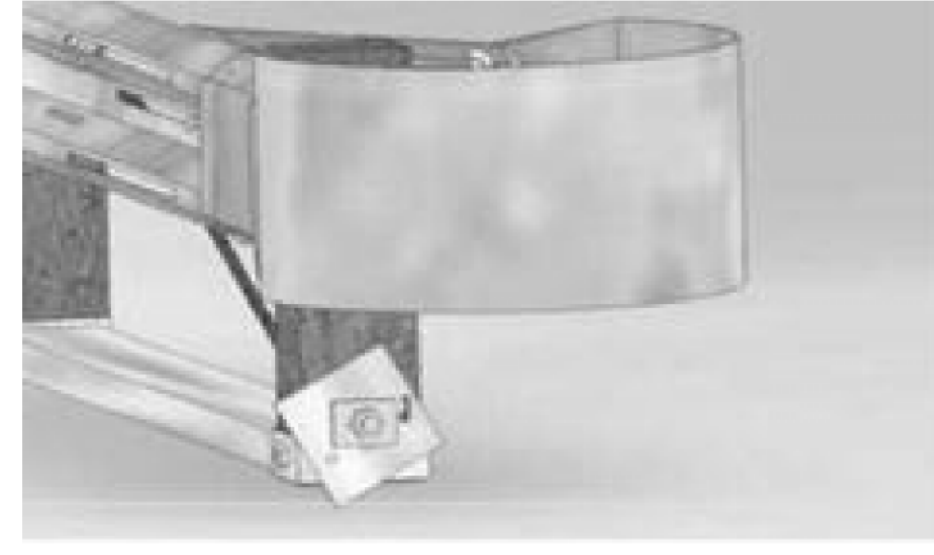
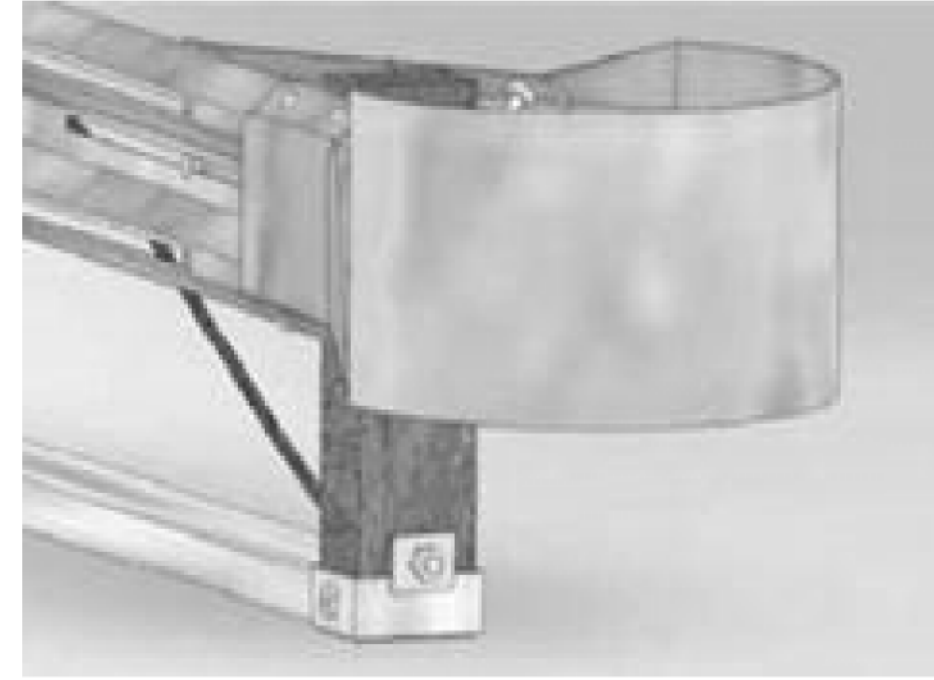
**GUARDRAIL REPLACEMENT GUIDELINES**

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 1 IN. OF MOVEMENT WHEN PUSHED DOWN BY HAND	MEDIUM	
CABLE ANCHOR BRACKET	LOOSE OR NOT FIRMLY SEATED IN RAIL	MEDIUM	

**NOTES:**

1. THESE ARE GUIDELINES FOR THE EVALUATION OF EXISTING GUARDRAIL. THESE ARE GUIDELINES ONLY AND THE CONTRACTOR SHALL REPLACE GUARDRAIL AS DIRECTED BY THE ENGINEER.
2. GUIDELINES ARE FROM THE NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM (NCHRP) REPORT 656, "CRITERIA FOR RESTORATION OF LONGITUDINAL BARRIERS", COPYRIGHT 2010.

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)
	MISSING BEARING PLATE	HIGH	 (MISALIGNED BEARING PLATE)
 (MISSING BEARING PLATE)			

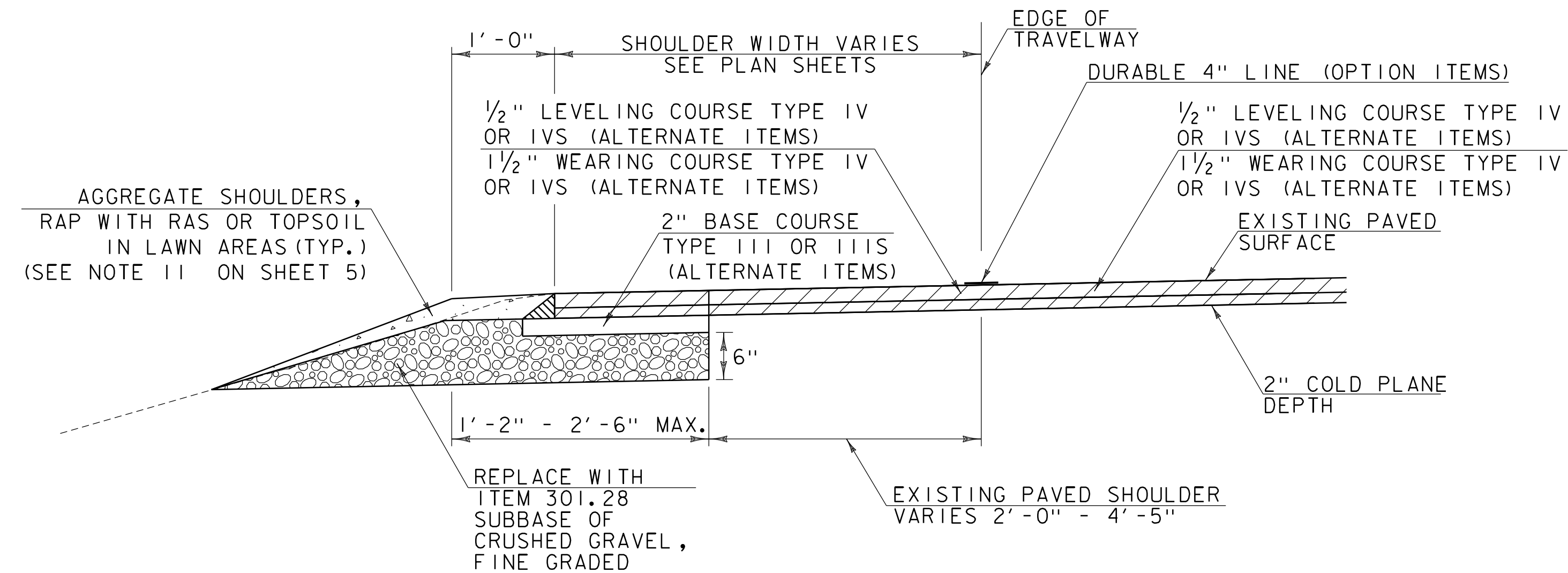
PROJECT NAME: WILLISTON  
PROJECT NUMBER: STP FPAV(10)

FILE NAME: z17v027detail.dgn  
PROJECT LEADER: G. EDWARDS  
DESIGNED BY: G. BURGMEIER  
GUARDRAIL DETAIL SHEET 2

PLOT DATE: 11/20/2018  
DRAWN BY: G. MERKLE  
CHECKED BY: J. LITTLE  
SHEET 11 OF 48



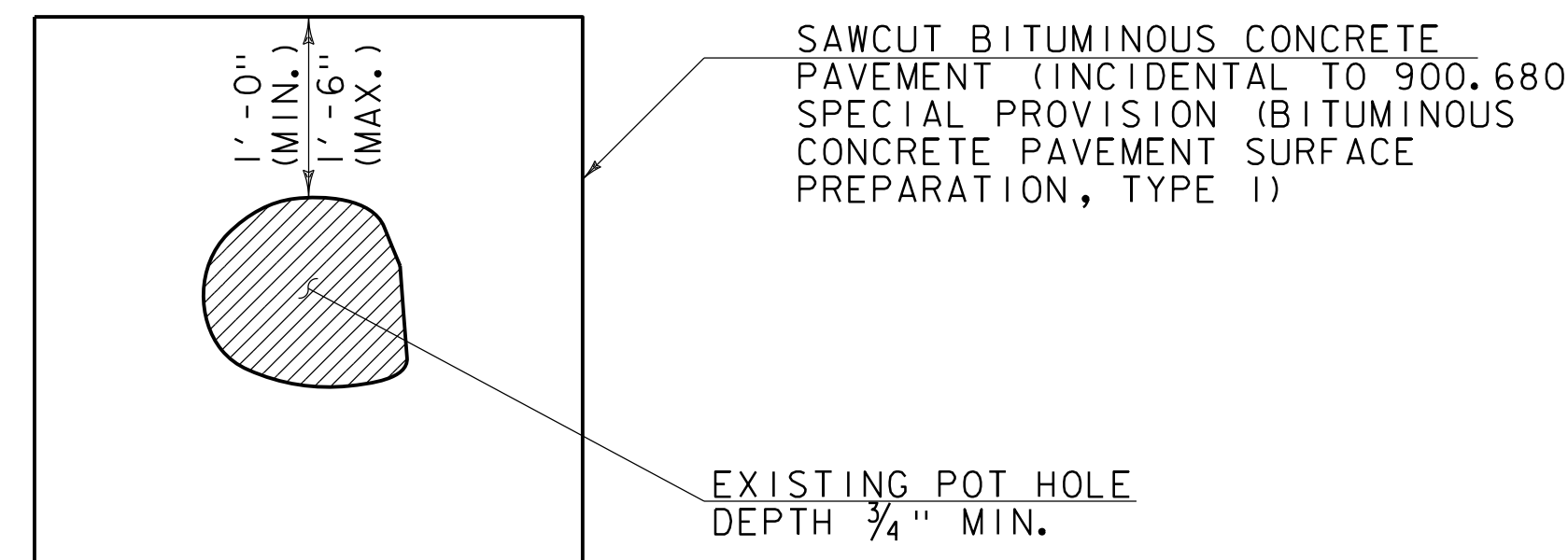




SHOULDER WIDENING DETAIL - COLD PLANE  
SEE TABLE ON THIS SHEET

NOTES:

EXCAVATION SHALL BE PAID FOR USING THE APPROPRIATE RENTAL ITEMS. THE METHOD OF REMOVAL AND THE USE OF RENTAL ITEMS SHALL BE APPROVED BY THE ENGINEER PRIOR TO ANY WORK BEING DONE. MATERIAL REMOVED SHALL BE REPLACED WITH ITEM 301.28 SUBBASE OF CRUSHED GRAVEL, FINE GRADED. EXCAVATED MATERIAL SHALL BE SPREAD ON THE ADJACENT SLOPES OR REMOVED FROM THE PROJECT AS DIRECTED BY THE ENGINEER. THIS WORK SHALL BE COMPLETED PRIOR TO PAVING. ANY SOIL SPREAD ON SIDE SLOPE SHALL HAVE TURF ESTABLISHMENT AS DIRECTED BY THE ENGINEER. THE FOLLOWING ITEMS WERE ESTIMATED FOR TURF ESTABLISHMENT: 651.15 SEED, 651.18 FERTILIZER, 651.20 AGRICULTURAL LIMESTONE AND 651.25 HAY MULCH.

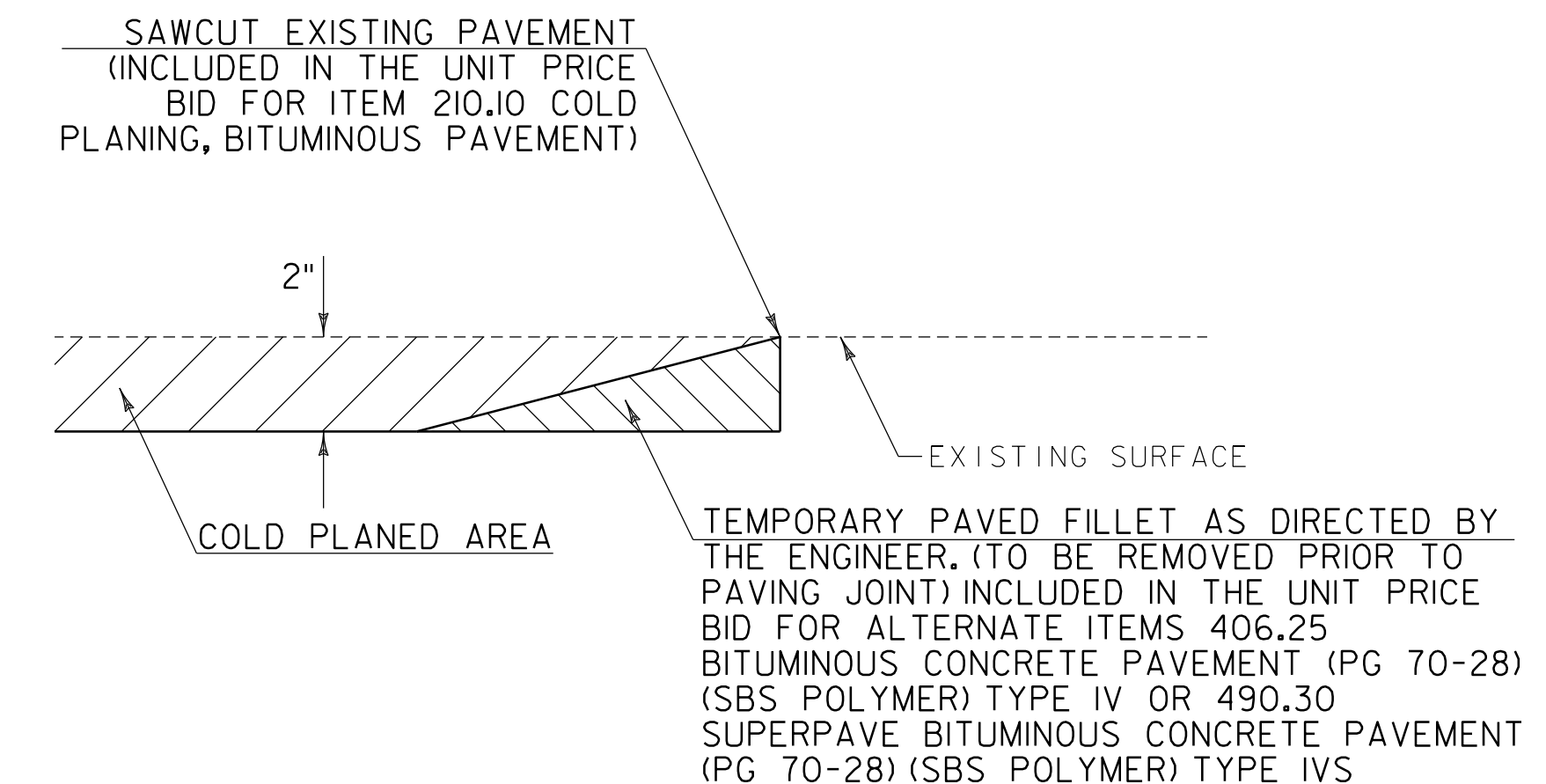


TYPICAL - POT HOLE REPAIR  
(SEE NOTE 2 ON SHEET 5)

EMULSIFIED ASPHALT (OPTION ITEMS) SHALL BE APPLIED AT ALL PATCH INTERFACES AT A RATE OF 0.25 - 0.5 GAL/SY. EMULSIFIED ASPHALT (OPTION ITEMS) SHALL MEET THE REQUIREMENTS OF SECTION 404 AND WILL BE CONSIDERED INCIDENTAL TO ITEM 900.680 SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT SURFACE PREPARATION, TYPE I).

SHOULDER WIDENING AREAS

STATION	STATION	POSITION	TOTAL PAVED SHOULDER WIDTH (FT)	ITEM 301.28 SUB. OF CRUSH. GRAV., F.G. (TON)
<b>U.S. Route 2</b>				
118+64	125+93	RT	4.0	37.2
140+09	142+00	RT	4.1	3.7
163+22	164+00	RT	4.0	2.2
163+22	164+00	LT	4.0	1.5
172+06	178+39	RT	4.25	25.6
187+94	190+38	RT	4.4	4.6
198+47	201+02	RT	4.75	6.2
201+02	203+28	RT	4.0	10.6
203+28	204+40	RT	3.75	2.5
SUBTOTAL				94.1



DETAIL AT VERTICAL COLD PLANE JOINTS

NOTE: THIS DETAIL SHALL BE USED AT THE LOCATIONS LISTED BELOW AS DIRECTED BY THE ENGINEER.

- WILLISTON:
- STA. 82+31.52 (BEGIN PROJECT)
  - STA. 83+17, RT (BOXWOOD STREET)
  - STA. 88+56, RT (MAPLE TREE PLACE)
  - STA. 88+59, LT (ZEPHYR ROAD)
  - STA. 94+02, LT (TALCOTT ROAD)
  - STA. 105+28, LT (TALCOTT ROAD)
  - STA. 139+59, LT (SOUTHRIDGE ROAD)
  - STA. 164+37, LT (OLD STAGE ROAD)
  - STA. 164+37, RT (TOWER LANE)
  - STA. 171+49, RT (WHITNEY HILL ROAD)
  - STA. 171+60, LT (MAPLE ROAD)
  - STA. 176+67, LT (CENTRAL SCHOOL DRIVE)
  - STA. 181+58, LT (LIBRARY LANE)
  - STA. 188+55, LT (SLATE BARN DRIVE)
  - STA. 197+89, LT (NORTH WILLISTON ROAD)
  - STA. 197+95, RT (OAK HILL ROAD)
  - STA. 205+92.00 (END PROJECT)

NOT TO SCALE

PROJECT NAME: WILLISTON  
PROJECT NUMBER: STP FPAV(10)

FILE NAME: z17v027detail.dgn  
PROJECT LEADER: G. EDWARDS  
DESIGNED BY: D. BARNES  
MISCELLANEOUS DETAIL SHEET 1

PLOT DATE: 11/20/2018  
DRAWN BY: D. BARNES  
CHECKED BY: J. LITTLE  
SHEET 12 OF 48



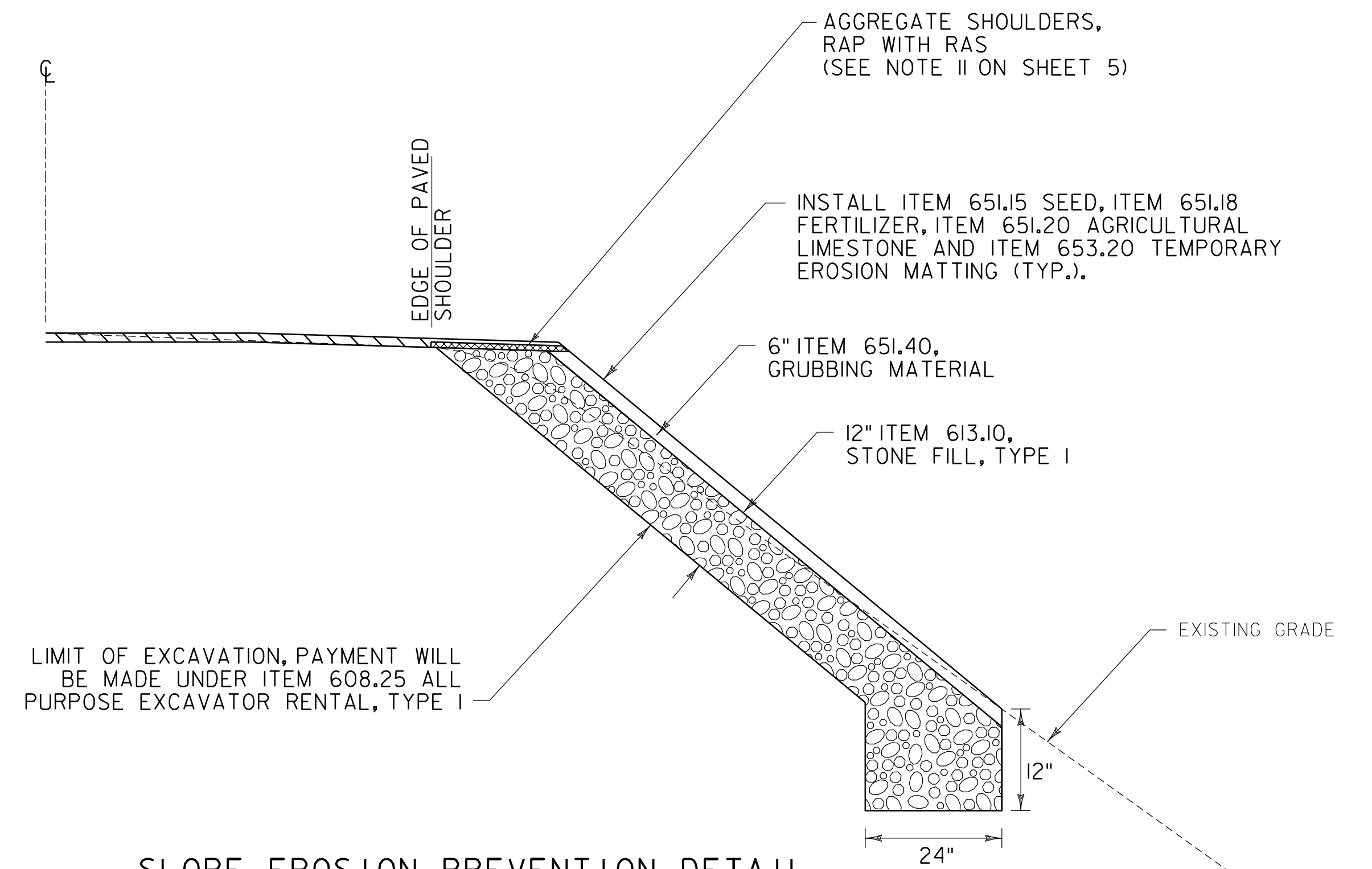
CHANGING ELEVATION OF DI'S, CB'S, OR MANHOLES (ITEM 604.40)			
STATION	POSITION	NUMBER OF STRUCT.	DESCRIPTION
U.S. ROUTE 2			
88+51	RT	1	DMH
88+52	LT	1	DMH
188+42	LT	1	DMH

CHANGING ELEVATION OF SEWER MANHOLES (ITEM 604.42)			
STATION	POSITION	NUMBER OF STRUCT.	DESCRIPTION
U.S. ROUTE 2			
171+59	LT	1	SMH

CHANGING ELEVATION OF SEWER MANHOLES (ITEM 604.42) (NO FEDERAL/STATE PARTICIPATION)			
STATION	POSITION	NUMBER OF STRUCT.	DESCRIPTION
U.S. ROUTE 2			
82+41	LT	1	SMH
82+99	RT	1	UNKNOWN MH
84+13	LT	1	SMH
93+32	LT	1	SMH
136+05	LT	1	SMH
138+04	LT	1	SMH
141+19	LT	1	SMH
164+36	RT	1	SMH
171+55	RT	1	SMH

ADJUST ELEVATION OF VALVE BOX (ITEM 629.20) (NO FEDERAL/STATE PARTICIPATION)			
STATION	POSITION	NUMBER OF VALVES	DESCRIPTION
U.S. ROUTE 2			
82+80	RT	1	WSO
86+58	RT	1	WSO
86+98	RT	1	WSO
88+14	RT	1	WSO
88+38	RT	1	WSO
88+78	RT	1	WSO
90+04	RT	1	WSO
92+94	RT	1	WSO
93+87	RT	1	WSO
94+11	RT	1	WSO
94+28	RT	1	WSO
94+64	RT	1	WSO
106+43	RT	1	WSO
106+57	RT	1	WSO
135+70	RT	1	WSO
164+03	RT	1	WSO
164+50	RT	1	WSO
171+68	LT	1	WSO
171+72	LT	1	WSO
188+66	LT	1	WSO
197+66	LT	1	WSO
198+17	LT	1	WSO
198+22	LT	1	WSO
198+22	LT	1	WSO
198+27	LT	1	WSO
198+30	LT	1	WSO

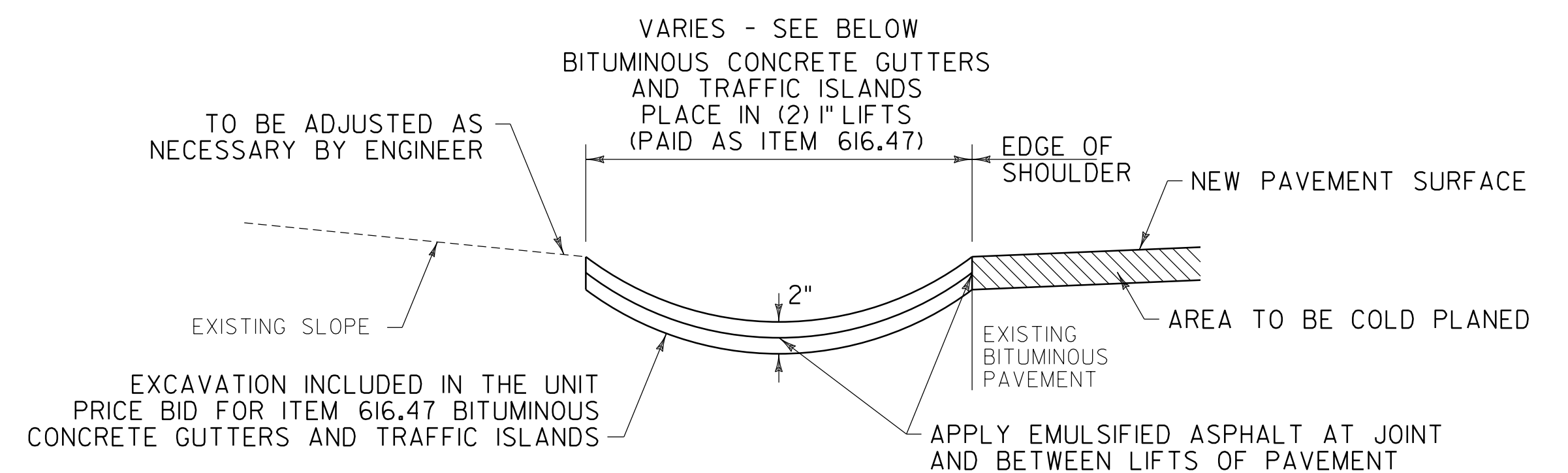
NATURAL GAS VALVES (TO BE ADJUSTED BY OTHERS)			
STATION	POSITION	NUMBER OF VALVES	DESCRIPTION
U.S. ROUTE 2			
88+87	LT	1	GSO
88+91	LT	1	GSO
95+28	LT	1	GSO
105+58	LT	1	GSO
105+58	LT	1	GSO
139+34	LT	1	GSO
139+34	LT	1	GSO
171+31	RT	1	GSO
171+31	RT	1	GSO



**SLOPE EROSION PREVENTION DETAIL**

NOTE: ALL WORK SHALL BE CONSTRUCTED WITHIN THE EXISTING ROADWAY RIGHT OF WAY.

STA. 194+53 TO 194+60, RT



**BITUMINOUS CONCRETE GUTTER DETAIL - COLD PLANE**

STA. 154+30 TO 157+01, LT (3' AVE. WIDTH)

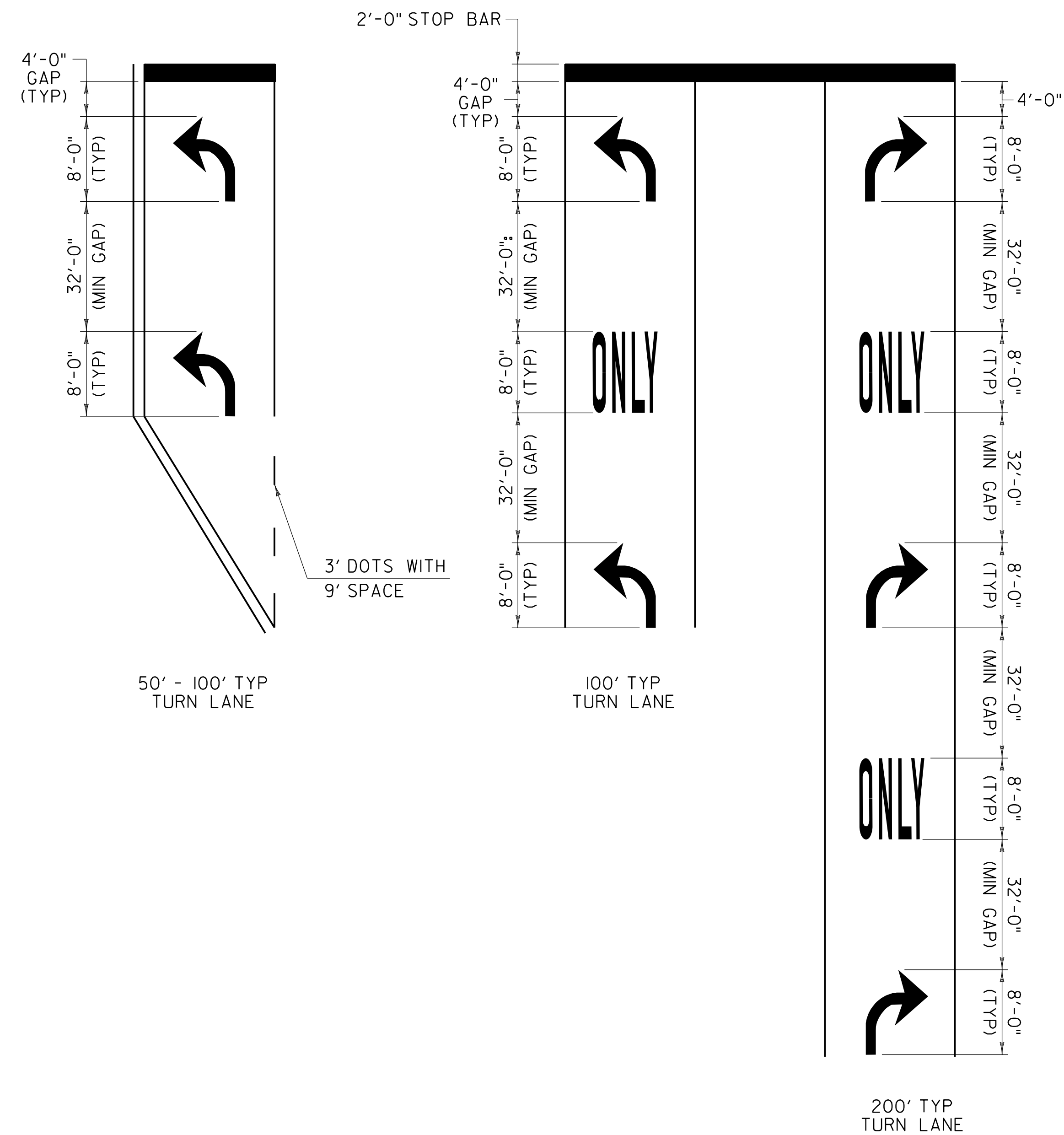
NOT TO SCALE

PROJECT NAME: WILLISTON  
PROJECT NUMBER: STP FPAV(10)

FILE NAME: z17v027detail.dgn  
PROJECT LEADER: G. EDWARDS  
DESIGNED BY: D. BARNES  
MISCELLANEOUS DETAIL SHEET 2

PLOT DATE: 11/20/2018  
DRAWN BY: D. BARNES  
CHECKED BY: J. LITTLE  
SHEET 13 OF 48

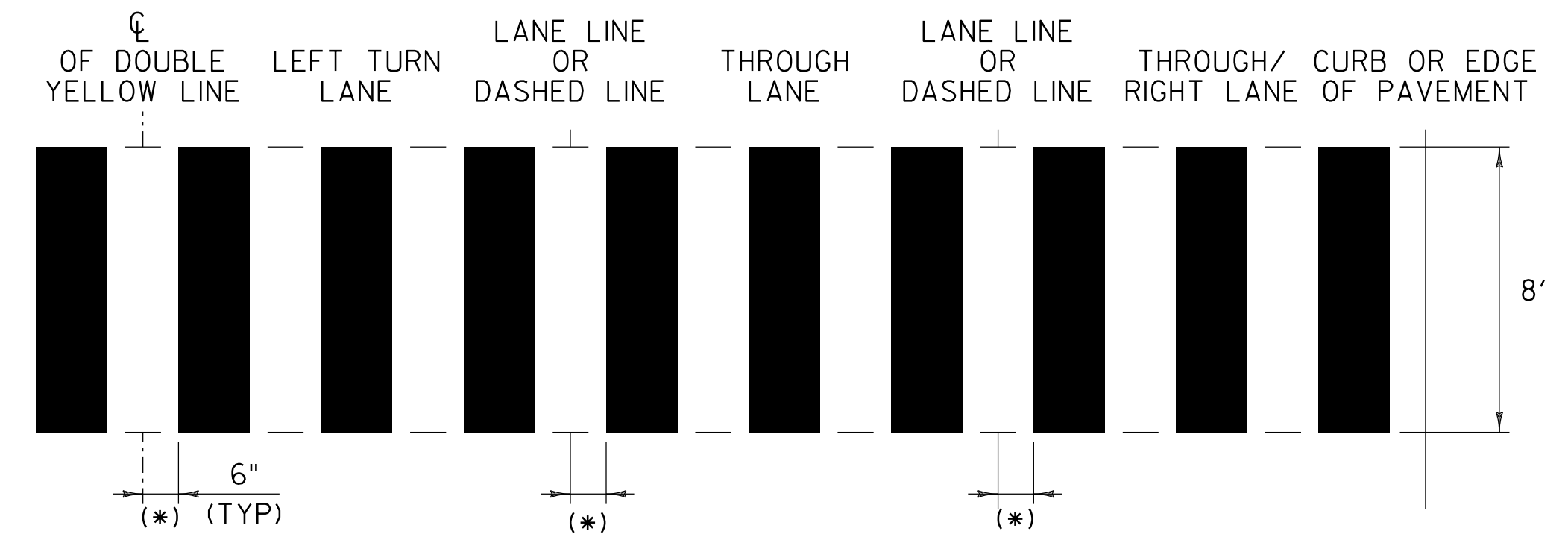




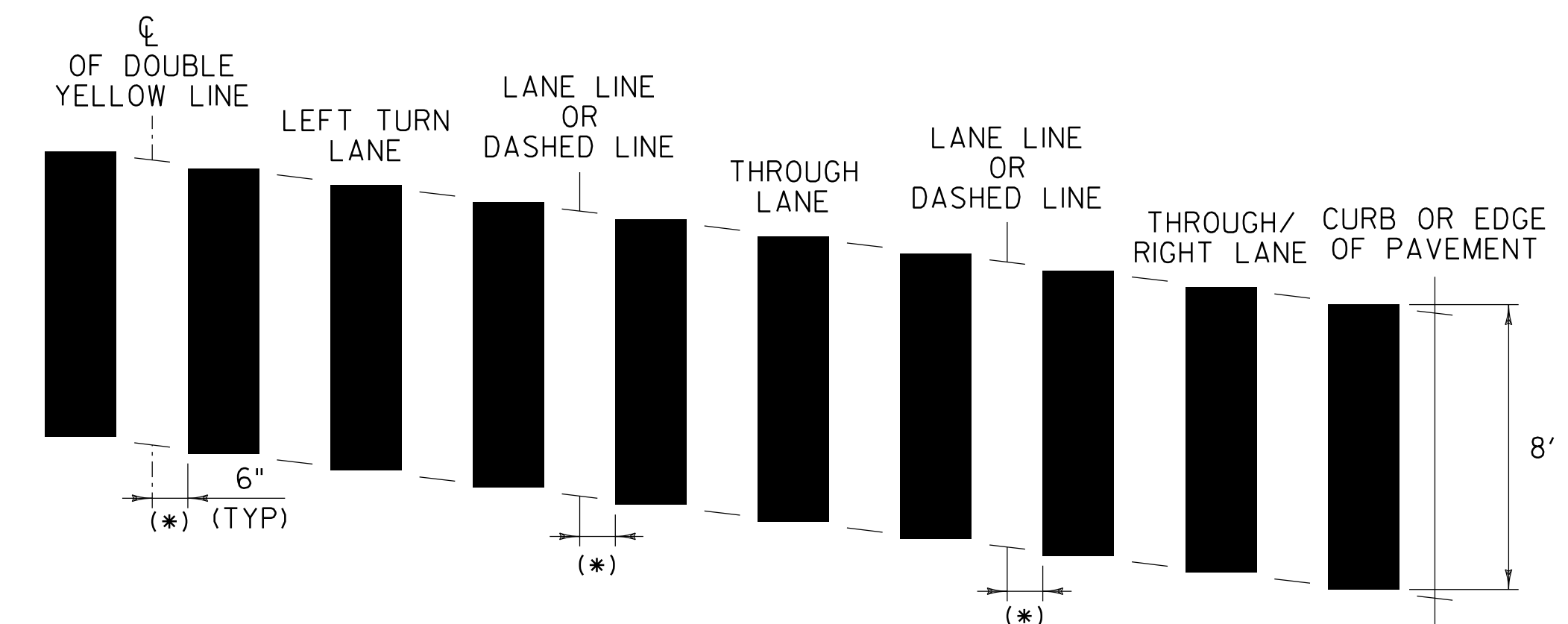
**TYPICAL MARKINGS FOR TURN LANES**

**NOTES:**

1. TURN ARROWS SHALL BE PLACED AT THE BEGINNING AND END OF THE LEFT OR RIGHT TURN LANE.
2. THE "ONLY" WORD MARKINGS SHALL BE USED TO SUPPLEMENT LANE-USE ARROW MARKINGS FOR TURN LANES 100' OR LONGER.
3. THE LONGITUDINAL SPACE BETWEEN WORD OR SYMBOL MESSAGE MARKINGS, SHOULD BE AT LEAST FOUR TIMES THE HEIGHT OF THE CHARACTERS FOR LOW SPEED ROADS, BUT NOT MORE THAN TEN TIMES THE HEIGHT OF THE CHARACTERS UNDER ANY CONDITIONS.
4. STOP BARS ARE INSTALLED ONLY WHERE A STOP SIGN OR TRAFFIC SIGNAL ARE LOCATED.
5. MORE ARROWS AND ONLYS ARE OPTIONAL WHEN SPACE PERMITS. ARROW MARKINGS START AT THE BEGINNING OF THE SOLID LANE LINE.
6. EXCLUSIVE TURN (LEFT OR RIGHT) LANE LINES SHALL BE SOLID AND EXTEND BACK FROM THE STOP LINE TO THE POINT OF FULL LANE WIDTH OF THE TURN LANE. THREE FOOT DOTS WITH A NINE FOOT SPACE SHOULD BE EXTENDED THE FULL LENGTH OF THE LANE TAPER.



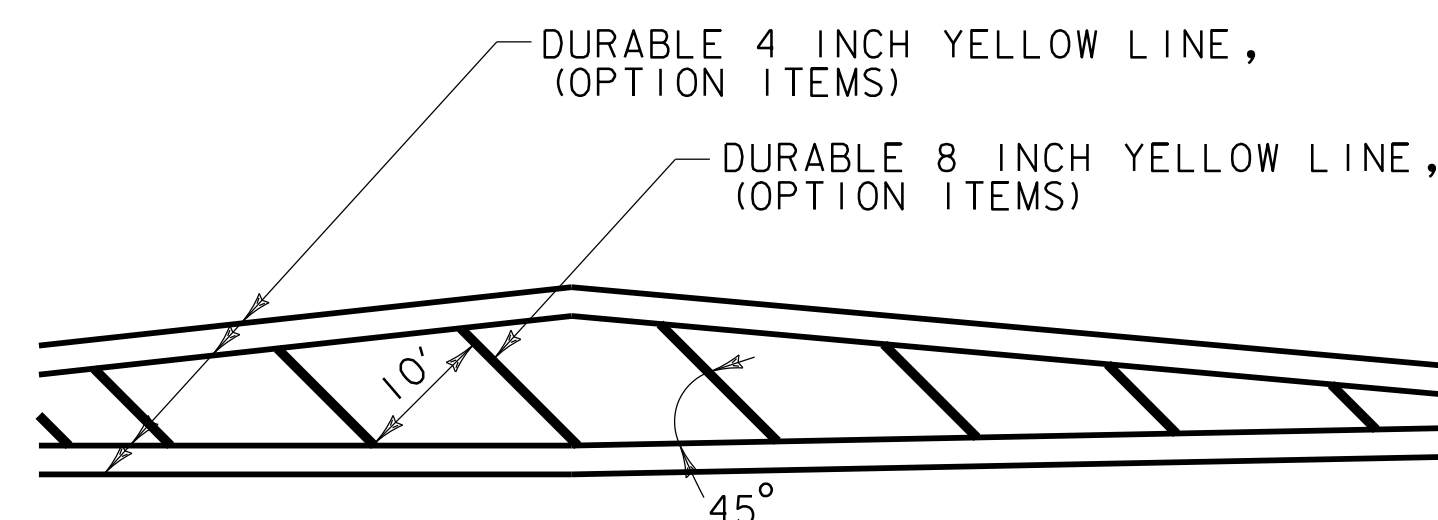
**90 DEGREES BLOCK PATTERN CROSSWALK DETAIL**  
SEE SHEETS 20 - 44 FOR LOCATIONS



**SKEWED BLOCK PATTERN CROSSWALK DETAIL**  
SEE SHEETS 20 - 44 FOR LOCATIONS

**CROSSWALK DETAIL NOTES:**

1. THIS DETAIL IS DESIGNED FOR AN 11 FOOT LANE.
2. MARK LIGHT STRING LINE ON PAVEMENT ACROSS ROADWAY (CURB TO CURB).
3. ESTABLISH THE CENTERLINE OF THE ROADWAY (DOUBLE YELLOW LINE OR LANE LINE).
4. BLOCKS ARE PARALLEL TO THE CENTERLINE (DOUBLE YELLOW LINE OR LANE LINE) (OFFSET BLOCKS VERTICALLY TO ACHIEVE REQUIRED SKEW).
5. ALWAYS START MEASURING FROM THE CENTERLINE OR LANE LINE RIGHT, WITH THE FLOW OF TRAFFIC.
6. BLOCKS ARE 24 INCHES (TYPICAL).
7. (*) THIS DISTANCE WILL INCREASE TO 1.0' FOR A 12 FOOT LANE.



**GORE MARKING DETAIL**

SEE SHEETS 20 - 44 FOR LOCATIONS

NOT TO SCALE

PROJECT NAME: WILLISTON  
PROJECT NUMBER: STP FPAV(10)

FILE NAME: z17v027detail.dgn  
PROJECT LEADER: G. EDWARDS  
DESIGNED BY: D. BARNES  
MISCELLANEOUS DETAIL SHEET 3

PLOT DATE: 11/20/2018  
DRAWN BY: D. BARNES  
CHECKED BY: J. LITTLE  
SHEET 14 OF 48





### TURF ESTABLISHMENT

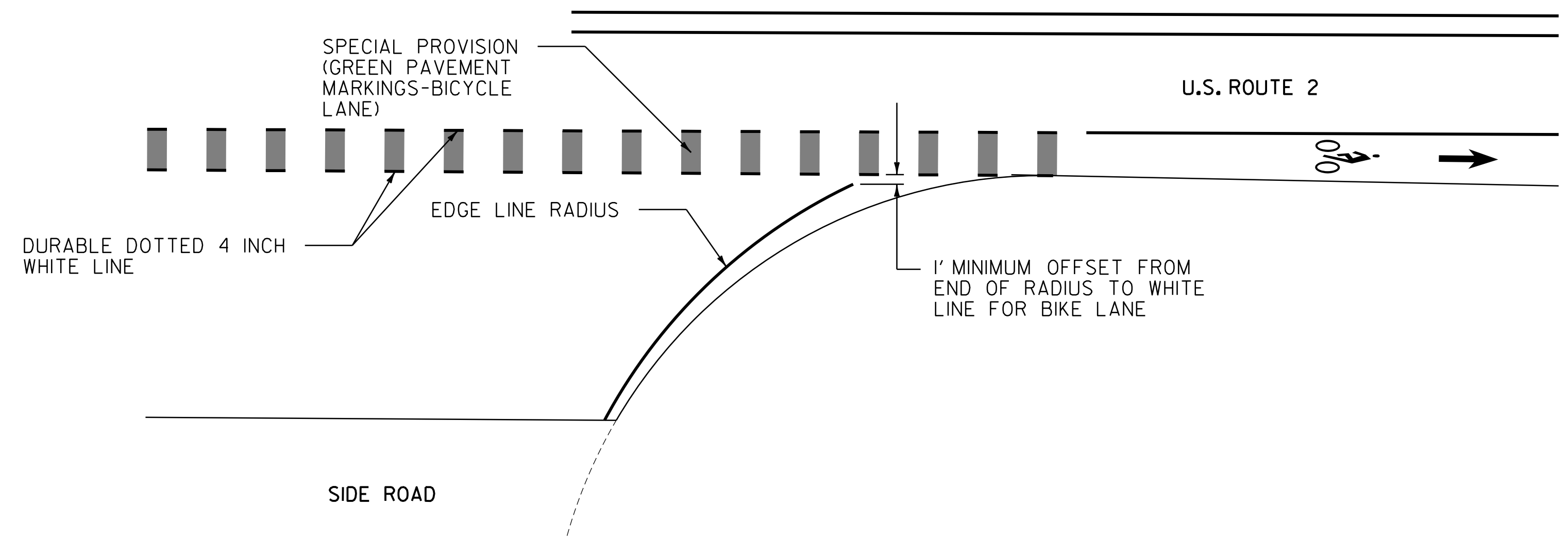
VAOT LOW GROW/FINE FESCUE MIX						
	LBS/AC					
WEIGHT	BROADCAST	HYDROSEED	NAME	LATIN NAME	GERM	PURITY
38%	57	95	CREeping RED FESCUE	FESTUCA RUBRA VAR. RUBRA	90%	98%
29%	43.5	72.5	HARD FESCUE	FESTUCA LONGIFOLIA	85%	95%
15%	22.5	37.5	CHEWINGS FESCUE	FESTUCA RUBRA VAR. COMMUTATA	87%	95%
15%	22.5	37.5	ANNUAL RYEGRASS	LOLIUM MULTIFLORUM	90%	95%
3%	4.5	7.5	INERTS			
100%	150	250				

VAOT RURAL AREA MIX						
	LBS/AC					
WEIGHT	BROADCAST	HYDROSEED	NAME	LATIN NAME	GERM	PURITY
37.5%	22.5	45	CREeping RED FESCUE	FESTUCA RUBRA VAR. RUBRA	85%	98%
37.5%	22.5	45	TALL FESCUE	FESTUCA ARUNDINACEA	90%	95%
5.0%	3	6	RED TOP	AGROSTIS GIGANTEA	90%	95%
15.0%	9	18	WHITE FIELD CLOVER	TRIFOLIUM REPENS	85%	98%
5.0%	3	6	ANNUAL RYE GRASS	LOLIUM MULTIFLORUM	85%	95%
100%	60	120				

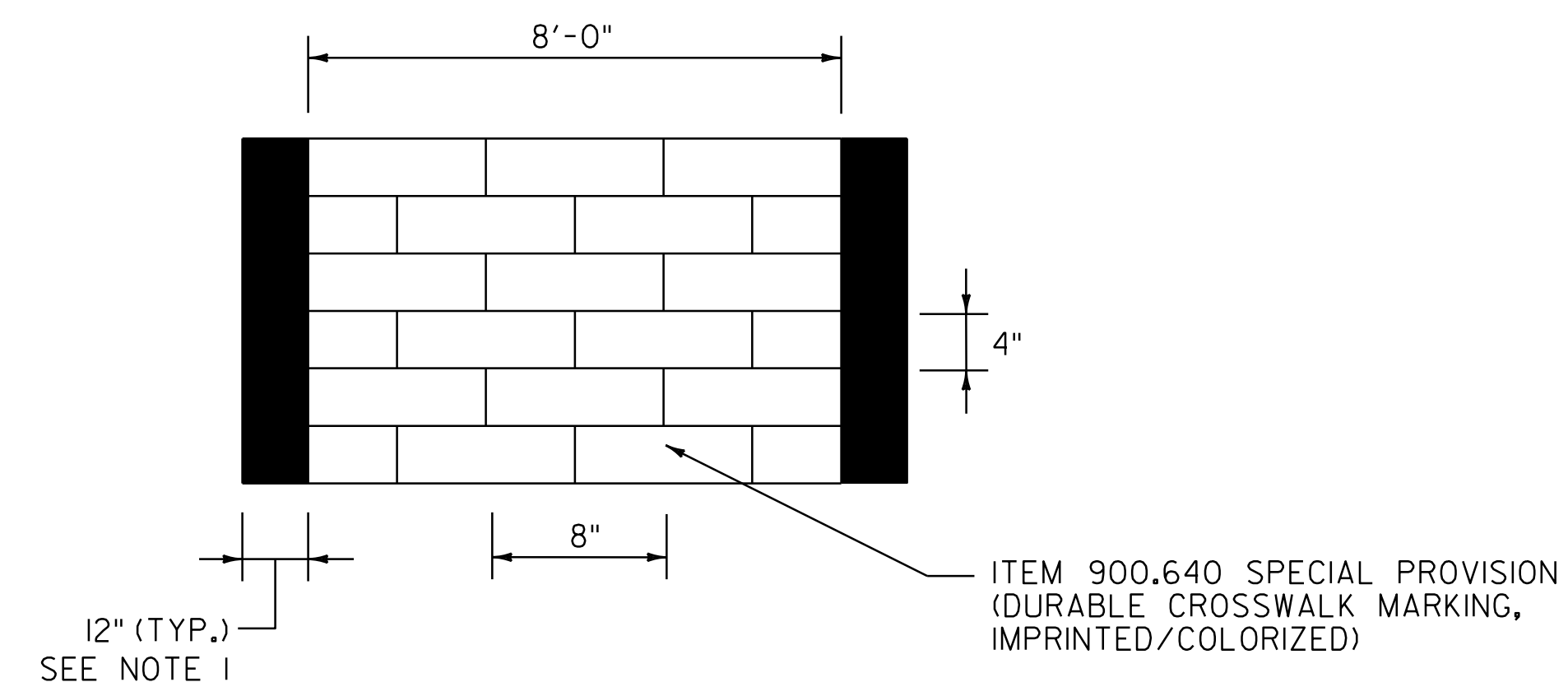
GENERAL AMENDMENT GUIDANCE		
FERTILIZER	LIME	
10/20/10	AG LIME	PELLETIZED
500 LBS/AC	2 TONS/AC	1 TONS/AC

### CONSTRUCTION GUIDANCE

1. SEED MIX: THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER ON WHICH SEED MIX TO USE.
2. SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED UPLAND (NON WETLAND) AREAS DISTURBED BY THE CONTRACTOR.
3. ALL SEED MIXTURES: SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT AND SHALL BE FREE OF ALL NOXIOUS SEED.
4. FERTILIZER AND LIMESTONE: SHALL FOLLOW RATES SHOWN ON PLAN OR AS DIRECTED BY THE ENGINEER.
5. HAY MULCH: TO BE PLACED ON EARTH SLOPES AT THE RATE OF 2 TONS/ACRE, ACHIEVE 90% GROUND COVER OR AS DIRECTED BY THE ENGINEER.
6. HYDROSEEDING: ALTHOUGH GUIDANCE IS GIVEN ABOVE THE SITE CONDITIONS AND THE TYPE OF HYDROSEED PROPOSED FOR USE WILL ULTIMATELY DICTATE THE AMOUNTS AND TYPES OF SOIL AMENDMENTS TO BE APPLIED.
7. TURF ESTABLISHMENT: PLACING SEED, FERTILIZER, LIME AND MULCH PRIOR TO SEPTEMBER 15 AND AFTER APRIL 15 CAN BETTER ENSURE A VIGOROUS GROWTH OF GRASS.



SIDE ROAD RADII AT GREEN BIKE PAVEMENT MARKING DETAIL  
SEE SHEETS 20 - 44 FOR LOCATIONS.



### PERMANENT CROSSWALK MARKING DETAIL

NOTE: FOR ADDITIONAL DETAILS, SEE THE SPECIAL PROVISIONS.

STA. 177+81, RT TO 177+85, LT  
STA. 181+43, LT TO 181+43, RT  
STA. 185+23, LT TO 185+23, RT  
STA. 193+20, LT TO 193+20, RT

#### NOTES:

1. PERMANENT CROSSWALKS SHALL HAVE A DURABLE 12 INCH WIDE THERMOPLASTIC WHITE LINE PLACED ON THE OUTSIDE EDGES OF THE INLAID BRICK PATTERN INCIDENTAL TO PAY ITEM 900.640 "SPECIAL PROVISION (DURABLE CROSSWALK MARKING, IMPRINTED/COLORIZED)".
2. THE INLAID BRICK PATTERN WILL BE TERRA COTTA IN COLOR INCIDENTAL TO ITEM 900.640 "SPECIAL PROVISION (DURABLE CROSSWALK MARKING, IMPRINTED/COLORIZED)".
3. TEMPORARY CROSSWALK MARKINGS SHALL ONLY CONSIST OF 12" WIDE WHITE LINE ON THE OUTSIDE EDGES AS SHOWN ABOVE. THE PER FOOT COST OF INSTALLED TEMPORARY CROSSWALK MARKINGS SHALL BE PAID UNDER ITEM 646.702 "TEMPORARY CROSSWALK MARKING, PAINT".

NOT TO SCALE

PROJECT NAME: WILLISTON  
PROJECT NUMBER: STP FPAV(10)

FILE NAME: z17v027detail.dgn  
PROJECT LEADER: G. EDWARDS  
DESIGNED BY: D. BARNES  
MISCELLANEOUS DETAIL SHEET 4

PLOT DATE: 11/20/2018  
DRAWN BY: D. BARNES  
CHECKED BY: J. LITTLE  
SHEET 15 OF 48



# QUANTITY SHEET 1

SUMMARY OF ESTIMATED QUANTITIES										TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES			
					ROADWAY	ROADWAY (NO FEDERAL PARTICIPATIO	ROADWAY (NO FEDERAL/STAT E	FULL C.E. ITEMS	ROADWAY (ALTERNATE A)	ROADWAY (ALTERNATE B)	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
					3						3		CY	COMMON EXCAVATION	203.15	0.2			COLD PLANING, BITUMINOUS PAVEMENT
					180						180		CY	EARTH BORROW	203.30	5	48550	SY	MAINLINE
					230						230		LF	SHOULDER BERM REMOVAL	203.40	5	2623	SY	SIDE ROADS
					1						1		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22	-	827	SY	ROUNDING
					52000						52000		SY	COLD PLANING, BITUMINOUS PAVEMENT	210.10	827	52000	SY	TOTAL
					100						100		TON	SUBBASE OF CRUSHED GRAVEL, FINE GRADED	301.28	3.3			SUBBASE OF CRUSHED GRAVEL, FINE GRADED
														BEGIN OPTION AA					
					520						520		CWT	EMULSIFIED ASPHALT	404.65	9.4	94.1	TON	SHOULDER WIDENING
					520						520		CWT	SPECIAL PROVISION (EMULSIFIED ASPHALT)(RS-1H OR CRS-1H)	900.683	9.4	2.6	TON	SIDEWALK RAMPS
														END OPTION AA			3.3	TON	ROUNDING
					1						1		LU	PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)	406.50	-	100	TON	TOTAL
					3						3		EACH	CHANGING ELEVATION OF DROP INLETS, CATCH BASINS, OR MANHOLES	604.40	-			
					1		9				10		EACH	CHANGING ELEVATION OF SEWER MANHOLES	604.42	-			
					10						10		HR	POWER GRADER RENTAL	608.15	EST			
					140						140		HR	ALL PURPOSE EXCAVATOR RENTAL, TYPE I	608.25	EST			
					20						20		HR	POWER BROOM RENTAL, TYPE I	608.30	EST			
					40						40		HR	POWER BROOM RENTAL, TYPE II	608.31	EST			
					170						170		HR	TRUCK RENTAL	608.37	EST			
					10						10		HR	LOADER RENTAL, TYPE I	608.40	EST			
					3						3		CY	STONE FILL, TYPE I	613.10	0.7			
					11						11		TON	BITUMINOUS CONCRETE GUTTERS AND TRAFFIC ISLANDS	616.47	0.4			
					4						4		EACH	RELOCATE MAILBOX, SINGLE SUPPORT	617.10	-			
					10						10		SY	PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH	618.10	0.9			
					30						30		SF	DETECTABLE WARNING SURFACE	618.30	-			
					300						300		LF	STEEL BEAM GUARDRAIL, GALVANIZED	621.20	11			
					7						7		EACH	ANCHOR FOR STEEL BEAM RAIL	621.60	-			
					50						50		EACH	REPLACE GUARDRAIL POST ASSEMBLY	621.76	4			
					25						25		EACH	REPLACE GUARDRAIL BEAM UNIT	621.77	2			
					1025						1025		LF	ADJUST HEIGHT OF GUARDRAIL	621.79	12.5			
					275						275		LF	REMOVAL AND DISPOSAL OF GUARDRAIL	621.80	-			
							26				26		EACH	ADJUST ELEVATION OF VALVE BOX	629.20	-			
					420						420		HR	UNIFORMED TRAFFIC OFFICERS	630.10	EST			
					1600						1600		HR	FLAGGERS	630.15	EST			
								1			1		LS	FIELD OFFICE, ENGINEERS	631.10	-			
								1			1		LS	TESTING EQUIPMENT, CONCRETE	631.16	-			
								1			1		LS	TESTING EQUIPMENT, BITUMINOUS	631.17	-			
								3000			3000		DL	FIELD OFFICE TELEPHONE (N.A.B.I.)	631.26	-			
					1						1		LS	MOBILIZATION/DEMOBILIZATION	635.11	-			
					1						1		LS	TRAFFIC CONTROL	641.10	-			
					4						4		EACH	PORTABLE CHANGEABLE MESSAGE SIGN	641.15	-			

PROJECT NAME: WILLISTON  
PROJECT NUMBER: STP FPAV(10)

FILE NAME: z17v027frm.dgn  
PROJECT LEADER: G. EDWARDS  
DESIGNED BY: G. BURGMEIER  
QUANTITY SHEET 1

PLOT DATE: 11/20/2018  
DRAWN BY: G. MERKLE  
CHECKED BY: J. LITTLE  
SHEET 16 OF 48





# QUANTITY SHEET 2

SUMMARY OF ESTIMATED QUANTITIES										TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES				
					ROADWAY	ROADWAY (NO FEDERAL PARTICIPATIO	ROADWAY (NO FEDERAL/STAT E	FULL C.E. ITEMS	ROADWAY (ALTERNATE A)	ROADWAY (ALTERNATE B)	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS	
														BEGIN OPTION BB						
					30670						30670		LF	DURABLE 4 INCH WHITE LINE, THERMOPLASTIC	646.402	306				
					30670						30670		LF	DURABLE 4 INCH WHITE LINE, EPOXY PAINT	646.403	306				
					30670						30670		LF	DURABLE 4 INCH WHITE LINE, POLYUREA	646.404	306				
														END OPTION BB						
														BEGIN OPTION CC						
					26300						26300		LF	DURABLE 4 INCH YELLOW LINE, THERMOPLASTIC	646.412	267				
					26300						26300		LF	DURABLE 4 INCH YELLOW LINE, EPOXY PAINT	646.413	267				
					26300						26300		LF	DURABLE 4 INCH YELLOW LINE, POLYUREA	646.414	267				
														END OPTION CC						
														BEGIN OPTION DD						
					115						115		LF	DURABLE 8 INCH WHITE LINE, THERMOPLASTIC	646.442	5				
					115						115		LF	DURABLE 8 INCH WHITE LINE, EPOXY PAINT	646.443	5				
					115						115		LF	DURABLE 8 INCH WHITE LINE, POLYUREA	646.444	5				
														END OPTION DD						
														BEGIN OPTION EE						
					540						540		LF	DURABLE 8 INCH YELLOW LINE, THERMOPLASTIC	646.452	11				
					540						540		LF	DURABLE 8 INCH YELLOW LINE, EPOXY PAINT	646.453	11				
					540						540		LF	DURABLE 8 INCH YELLOW LINE, POLYUREA	646.454	11				
														END OPTION EE						
														BEGIN OPTION FF						
					370						370		LF	DURABLE 24 INCH STOP BAR, THERMOPLASTIC	646.482	6				
					370						370		LF	DURABLE 24 INCH STOP BAR, EPOXY PAINT	646.483	6				
					370						370		LF	DURABLE 24 INCH STOP BAR, POLYUREA	646.484	6				
														END OPTION FF						
														BEGIN OPTION GG						
					192						192		EACH	DURABLE LETTER OR SYMBOL, THERMOPLASTIC	646.492	-				
					192						192		EACH	DURABLE LETTER OR SYMBOL, EPOXY PAINT	646.493	-				
					192						192		EACH	DURABLE LETTER OR SYMBOL, POLYUREA	646.494	-				
														END OPTION GG						
														BEGIN OPTION HH						
					510						510		LF	DURABLE CROSSWALK MARKING, THERMOPLASTIC	646.502	7				
					510						510		LF	DURABLE CROSSWALK MARKING, EPOXY PAINT	646.503	7				
					510						510		LF	DURABLE CROSSWALK MARKING, POLYUREA	646.504	7				
														END OPTION HH						
					61300						61300		LF	TEMPORARY 4 INCH WHITE LINE, PAINT	646.602	572				
					52600						52600		LF	TEMPORARY 4 INCH YELLOW LINE, PAINT	646.612	534				
					225						225		LF	TEMPORARY 8 INCH WHITE LINE, PAINT	646.642	5				
					1100						1100		LF	TEMPORARY 8 INCH YELLOW LINE, PAINT	646.652	42				
					740						740		LF	TEMPORARY 24 INCH STOP BAR, PAINT	646.682	12				

PROJECT NAME: WILLISTON  
PROJECT NUMBER: STP FPAV(10)

FILE NAME: z17v027frm.dgn  
PROJECT LEADER: G. EDWARDS  
DESIGNED BY: G. BURGMEIER  
QUANTITY SHEET 2

PLOT DATE: 11/20/2018  
DRAWN BY: G. MERKLE  
CHECKED BY: J. LITTLE  
SHEET 17 OF 48



# QUANTITY SHEET 3

SUMMARY OF ESTIMATED QUANTITIES							TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES					
				ROADWAY	ROADWAY (NO FEDERAL PARTICIPATIO	ROADWAY (NO FEDERAL/STAT E	FULL C.E. ITEMS	ROADWAY (ALTERNATE A)	ROADWAY (ALTERNATE B)	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
				320						320		EACH	TEMPORARY LETTER OR SYMBOL, PAINT	646.692	-			SEED
				1280						1280		LF	TEMPORARY CROSSWALK MARKING, PAINT	646.702	20	6	LB	GUARDRAIL END TERMINALS
				5700						5700		EACH	LINE STRIPING TARGETS	646.76	60	54	LB	TURF ESTABLISHMENT
				65						65		LB	SEED	651.15	5	5	LB	ROUNDING
				350						350		LB	FERTILIZER	651.18	EST	65	LB	TOTAL
				2						2		TON	AGRICULTURAL LIMESTONE	651.20	EST			TEMPORARY EROSION MATTING
				2						2		TON	HAY MULCH	651.25	EST	175	SY	GUARDRAIL END TERMINALS
				120						120		CY	TOPSOIL	651.35	EST	5	SY	SLOPE EROSION PREVENTION
				6						6		SY	GRUBBING MATERIAL (6")	651.40	1	5	SY	ROUNDING
				185						185		SY	TEMPORARY EROSION MATTING	653.20	5	185	SY	TOTAL
				24						24		SF	TRAFFIC SIGNS, TYPE A	675.20	0.32			SPECIAL PROVISION (MATERIAL TRANSFER VEHICLE)
				70	30					100		LF	SQUARE TUBE SIGN POST AND ANCHOR	675.341	10	4242	TON	MAINLINE WEARING COURSE (TYPE IV OR IVS)
				4	3					7		EACH	REMOVING SIGNS	675.50	-	230	TON	SIDE ROAD WEARING COURSE (TYPE IV OR IVS)
					3					3		EACH	ERECTING SALVAGED SIGNS	675.60	-	5	TON	PULL-OFF (WEARING COURSE TYPE IV OR IVS)
				11						11		EACH	DELINEATOR WITH STEEL POST	676.10	-	30	TON	SHOULDER WIDENING (BASE COURSE TYPE III OR IIIS)
				11						11		EACH	REMOVAL OF EXISTING DELINEATOR	676.12	-	1493	TON	MAINLINE AND SIDE ROAD LEVELING COURSE (TYPE IV OR IVS)
				42						42		EACH	REMOVE AND REPLACE REFLECTOR UNIT	676.15	1	43	TON	SAFETY EDGE (TYPE IV OR IVS)
				1						1		LU	PRICE ADJUSTMENT, FUEL (N.A.B.I.)	690.50	-	57	TON	ROUNDING
					130					130		LF	SPECIAL PROVISION (DURABLE CROSSWALK MARKING, IMPRINTED/COLORIZED)	900.640	3	6100	TON	TOTAL
				330						330		SY	SPECIAL PROVISION (GREEN PAVEMENT MARKINGS - BICYCLE LANE)	900.675	6			(ALTERNATE) BITUMINOUS CONCRETE PAVEMENT (PG 70-28)(SBS POLYMER)
				1200						1200		SY	SPECIAL PROVISION (HAND-PLACED BITUMINOUS CONCRETE MATERIAL, DRIVES)	900.675	30	4242	TON	MAINLINE WEARING COURSE (TYPE IV)
				760						760		TON	SPECIAL PROVISION (AGGREGATE SHOULDERS, RAP WITH RAS)	900.680	14	230	TON	SIDE ROAD WEARING COURSE (TYPE IV)
				100						100		TON	SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT SURFACE PREPARATION, TYPE I)	900.680	EST	5	TON	PULL-OFF (WEARING COURSE TYPE IV)
				6100						6100		TON	SPECIAL PROVISION (MATERIAL TRANSFER VEHICLE)	900.680	57	30	TON	SHOULDER WIDENING (BASE COURSE TYPE III)
										6100		TON	BITUMINOUS CONCRETE PAVEMENT (PG 70-28)(SBS POLYMER)	406.25	57	1493	TON	MAINLINE AND SIDE ROAD LEVELING COURSE (TYPE IV)
										1		LU	AIR VOIDS PAY ADJUSTMENT (N.A.B.I.)	406.28	-	43	TON	SAFETY EDGE (TYPE IVS)
													END ALTERNATE ZA1			57	TON	ROUNDING
													BEGIN ALTERNATE ZA2			6100	TON	TOTAL
										6100		TON	SUPERPAVE BITUMINOUS CONCRETE PAVEMENT (PG 70-28)(SBS POLYMER)	490.30	57			(ALTERNATE) SUPERPAVE BITUMINOUS CONCRETE PAVEMENT (PG 70-28) (SBS POLYMER)
										1		LU	AIR VOIDS PAY ADJUSTMENT (N.A.B.I.)	490.31	-	4242	TON	MAINLINE WEARING COURSE (TYPE IVS)
													END ALTERNATE ZA2			230	TON	SIDE ROAD WEARING COURSE (TYPE IVS)

PROJECT NAME: WILLISTON  
PROJECT NUMBER: STP FPAV(10)

FILE NAME: z17v027frm.dgn  
PROJECT LEADER: G. EDWARDS  
DESIGNED BY: G. BURGMEIER  
QUANTITY SHEET 3

PLOT DATE: 11/20/2018  
DRAWN BY: G. MERKLE  
CHECKED BY: J. LITTLE  
SHEET 18 OF 48





# ITEM DETAIL SUMMARY SHEET

LOCATION			GUARDRAIL					MISCELLANEOUS										REMARKS			
BEGIN STA.	END STA.	POS	621.20	621.60	621.76	621.77	621.79	621.80	203.15	203.30	301.28	613.10	616.47	618.10	618.30	651.40	653.20		676.10	676.12	
			S.B. G.R., GALV.	ANCHOR FOR S.B. RAIL	REPLACE G.R. POST ASSEMBLY	REPLACE G.R. BEAM UNIT	ADJUST HEIGHT OF G.R.	REMOVAL & DISPOSAL OF G.R.	COMMON EXCAV.	EARTH BORROW	SUB. OF CRUSH. GRAV., F. G.	STONE FILL, TYPE I	BIT. CONC. GUTTERS & ISLANDS	PORT. CEM. CONC. SIDEWALK, 5 INCH	DET. WARNING SURFACE	GRUBBING MATERIAL (6")	TEMP. EROSION MATT		DEL. WITH STEEL POST	REMOVAL OF EXIST. DEL.	
			LF	EACH	EACH	EACH	LF	LF	CY	CY	TON	CY	TON	SY	SF	SY	SY	EACH	EACH		
<b>U.S. ROUTE 2 WILLISTON</b>																					
82+31.52	205+92.00	LT/RT									94.1									QUANTITIES FOR SHOULDER WIDENING. SEE SHEETS 12.	
88+00.0		RT							1.7		1.6			5.4	16					CONSTRUCT SIDEWALK LANDING AND INSTALL DETECTABLE WARNING SURFACE	
VARIES	VARIES				46	23														QUANTITIES FOR GUARDRAIL REPLACEMENT, SEE SHEETS 10 & 11.	
99+69.5	105+03.0	LT	39.5	1			537.5	37.5		25.0							25	1	1	INSTALL ANCHOR @ STA. 99+69.5; ADJUST GUARDRAIL STA. 100+07.0 TO 105+03.0.	
100+18.5	104+93.5	RT	79.0	2			400.0	75.0		50.0							50	2	2	INSTALL ANCHORS @ STA. 100+18.5 & 104+93.5; ADJUST GUARDRAIL STA. 100+56.0 TO 104+56.0.	
140+02.0	140+89.5	RT	91.5	2				87.5		50.0							50	2	2	INSTALL ANCHORS @ STA. 140+02.0 & 140+89.5	
154+30	157+01	LT											10.6							INSTALL BITUMINOUS CONCRETE GUTTER, SEE SHEET 13.	
171+34.0		RT							0.5		0.5			1.7	8					CONSTRUCT SIDEWALK LANDING AND INSTALL DETECTABLE WARNING SURFACE	
171+70.0		RT							0.6		0.5			2	6					CONSTRUCT SIDEWALK LANDING AND INSTALL DETECTABLE WARNING SURFACE	
194+07.5	194+82.5	RT	79.0	2				75.0		50.0		2.3				5	55	2	2	INSTALL ANCHORS @ STA. 194+07.5 & 194+82.5. INSTALL STONE FILL STA. 194+53 TO 194+60 RT. SEE DETAIL ON SHEET 13.	
204+30.0	205+55.0	LT																	2	2	RETAIN EXISTING GUARDRAIL
204+44.0	206+06.5	RT					75.0												2	2	ADJUST GUARDRAIL STA. 204+44 TO 204+81.5 AND STA. 205+69.0 TO 206+06.5.
SHEET SUBTOTALS			289.0	7	46	23	1012.5	275.0	2.8	175	96.7	2.3	10.6	9.1	30	5	180	11	11		
ROUNDING			11.0	-	4	2	12.5	-	0.2	5.0	3.3	0.7	0.4	0.9	-	1	5	-	-		
PROJECT TOTALS			300	7	50	25	1025	275	3	180	100	3	11	10	30	6	185	11	11		

PROJECT NAME: WILLISTON	PLOT DATE: 11/20/2018
PROJECT NUMBER: STP FPAV(10)	DRAWN BY: G. MERKLE
FILE NAME: z17v027frm.dgn	CHECKED BY: J. LITTLE
PROJECT LEADER: G. EDWARDS	SHEET 19 OF 48
DESIGNED BY: G. BURGMEIER	
ITEM DETAIL SUMMARY SHEET	



CHANGING ELEVATION OF DIS, CBS OR MHS  
STA. 82+99, RT

CHANGING ELEVATION OF SEWER MANHOLES  
(NO FEDERAL/STATE PARTICIPATION)  
STA. 82+41, LT  
STA. 84+13, LT

ADJUST ELEVATION OF VALVE BOX  
(NO FEDERAL/STATE PARTICIPATION)  
STA. 82+80, RT

DURABLE 4 INCH WHITE LINE (OPTION ITEMS)  
TEMPORARY 4 INCH WHITE LINE, PAINT  
(ALL LINES WILL INCLUDE EDGE LINE BREAKS  
AND RADII FOR SIDE ROADS)  
STA. 82+31.52 TO 86+00, SOLID LT  
STA. 82+31.52 TO 82+64, SOLID RT  
STA. 82+64 TO 83+68, DOTTED RT (2)  
STA. 83+17, SOLID RT (EDGE LINES, BOXWOOD ST.)  
STA. 83+67 TO 84+79, SOLID LT (LANE LINE)  
STA. 83+83 TO 86+00, SOLID RT  
STA. 84+79 TO 86+00, DOTTED LT  
STA. 84+89 TO 86+00, DOTTED RT

DURABLE 4 INCH YELLOW LINE (OPTION ITEMS)  
TEMPORARY 4 INCH YELLOW LINE, PAINT  
(ALL LINES WILL INCLUDE  $\phi$  BREAKS FOR SIDE ROADS)  
STA. 82+31.52 TO 82+40, DOUBLE SOLID LT & RT  
STA. 83+67 TO 85+75, DOUBLE SOLID RT  
STA. 85+75 TO 86+00, DOUBLE SOLID LT

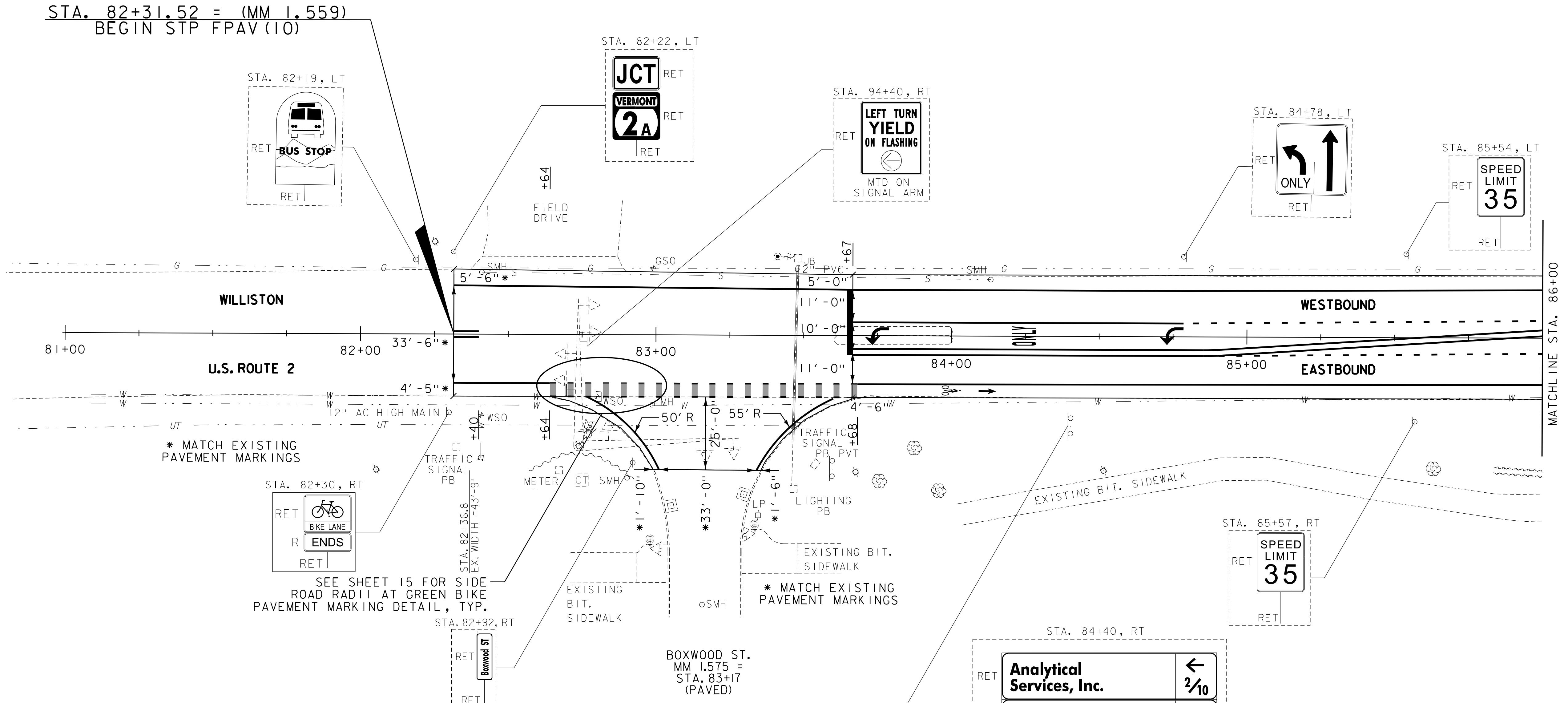
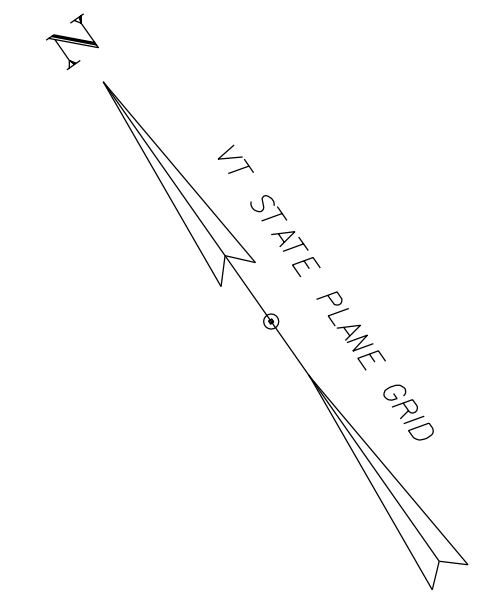
DURABLE 24 INCH STOP BAR (OPTION ITEMS)  
TEMPORARY 24 INCH STOP BAR, PAINT  
STA. 83+66, LT-RT

DURABLE LETTER OR SYMBOL (OPTION ITEMS)  
STA. 83+75, CL ARROW  
STA. 84+00, RT BIKE LANE SYMBOL  
STA. 84+12, RT BIKE LANE ARROW  
STA. 84+25, CL "ONLY"  
STA. 84+74, CL ARROW

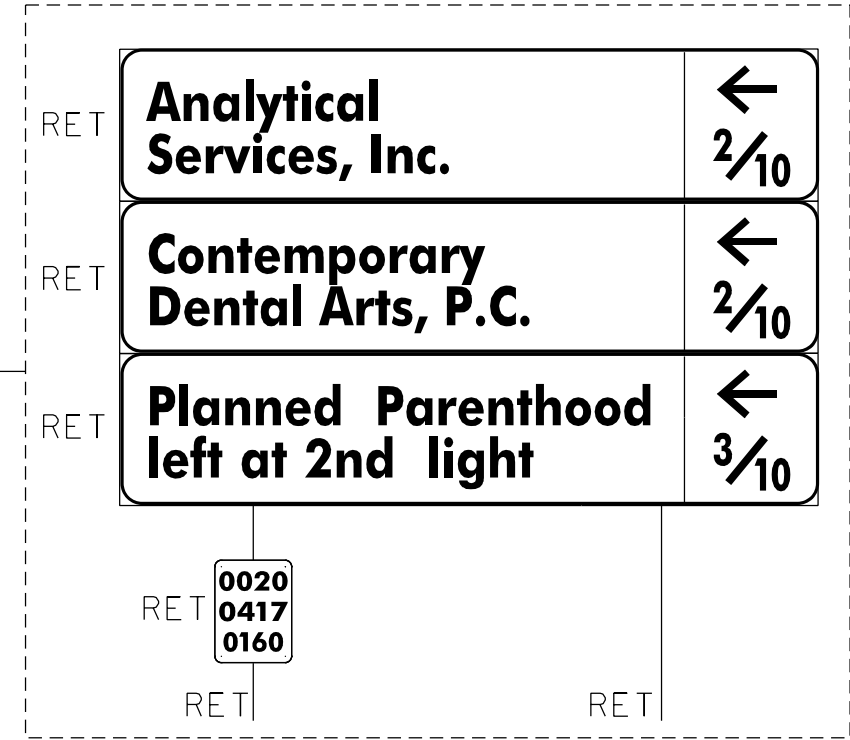
TEMPORARY LETTER OR SYMBOL, PAINT  
STA. 83+75, CL ARROW  
STA. 84+00, RT BIKE LANE SYMBOL  
STA. 84+12, RT BIKE LANE ARROW  
STA. 84+74, CL ARROW

REMOVING SIGNS  
AS SHOWN - 1

SPECIAL PROVISION (GREEN PAVEMENT  
MARKINGS - BICYCLE LANE)  
STA. 82+64 TO 83+68, BIKE LANE RT  
SEE SHEET 15



- NOTES:**
- FOR LEGENDS, SEE SHEETS 3-4.
  - ALL EXISTING SIGNS NOT SHOWN ON THE PLANS SHALL BE RETAINED.
  - PRIOR TO COLD PLANING, ANY VEHICLE LOOP DETECTORS SHALL BE SAWCUT AT THE FACE OF CURB IN FRONT OF PULLBOXES AT A DEPTH OF 5" - 6" INCHES. THIS IS TO ENSURE THAT NO OTHER CONDUIT SHALL BE PULLED DOWN BY THE COLD PLANER.
  - ALL UTILITY LOCATIONS SHOWN ARE APPROXIMATE AND SHOULD BE VERIFIED PRIOR TO ANY WORK COMMENCING.



PROJECT NAME:	WILLISTON	PLOT DATE:	11/20/2018
PROJECT NUMBER:	STP FPAV(10)	DRAWN BY:	D. BARNES
FILE NAME:	z17v027bdr.dgn	DESIGNED BY:	D. BARNES
PROJECT LEADER:	G. EDWARDS	CHECKED BY:	J. LITTLE
PLAN SHEET 1		SHEET	20 OF 48





CHANGING ELEVATION OF SEWER MANHOLES  
(NO FEDERAL/STATE PARTICIPATION)  
STA. 93+32, LT

ADJUST ELEVATION OF VALVE BOX  
(NO FEDERAL/STATE PARTICIPATION)  
STA. 92+94, RT  
STA. 93+87, RT  
STA. 94+11, RT  
STA. 94+28, RT  
STA. 94+64, RT

DURABLE 4 INCH WHITE LINE (OPTION ITEMS)  
TEMPORARY 4 INCH WHITE LINE, PAINT  
(ALL LINES WILL INCLUDE EDGE LINE BREAKS  
AND RADII FOR SIDE ROADS)  
STA. 91+00 TO 93+50, SOLID LT  
STA. 91+00 TO 92+34, DOTTED LT  
STA. 91+00 TO 92+51, DOTTED RT  
STA. 91+00 TO 93+51, SOLID RT  
STA. 92+51 TO 93+51, SOLID RT (LANE LINE)  
STA. 93+50 TO 94+23, DOTTED LT (2)  
STA. 93+51 TO 94+47, DOTTED RT (2)  
STA. 94+02, SOLID LT (EDGE LINES, TALCOTT RD. TH-84)  
STA. 94+02, SOLID LT (LANE LINE, TALCOTT RD. TH-84)  
STA. 94+39 TO 95+42, SOLID LT (LANE LINE)  
STA. 94+39 TO 95+81, SOLID LT (LANE LINES) (2)  
STA. 94+47 TO 96+00, SOLID RT  
STA. 95+42 TO 96+00, DOTTED LT  
STA. 95+81 TO 96+00, DOTTED LT (2)

DURABLE 4 INCH YELLOW LINE (OPTION ITEMS)  
TEMPORARY 4 INCH YELLOW LINE, PAINT  
(ALL LINES WILL INCLUDE C BREAKS FOR SIDE ROADS)  
STA. 91+00 TO 93+50, SOLID LT & RT  
STA. 94+02, DOUBLE SOLID LT (TALCOTT RD. TH-84)  
STA. 94+39 TO 96+00, DOUBLE SOLID RT

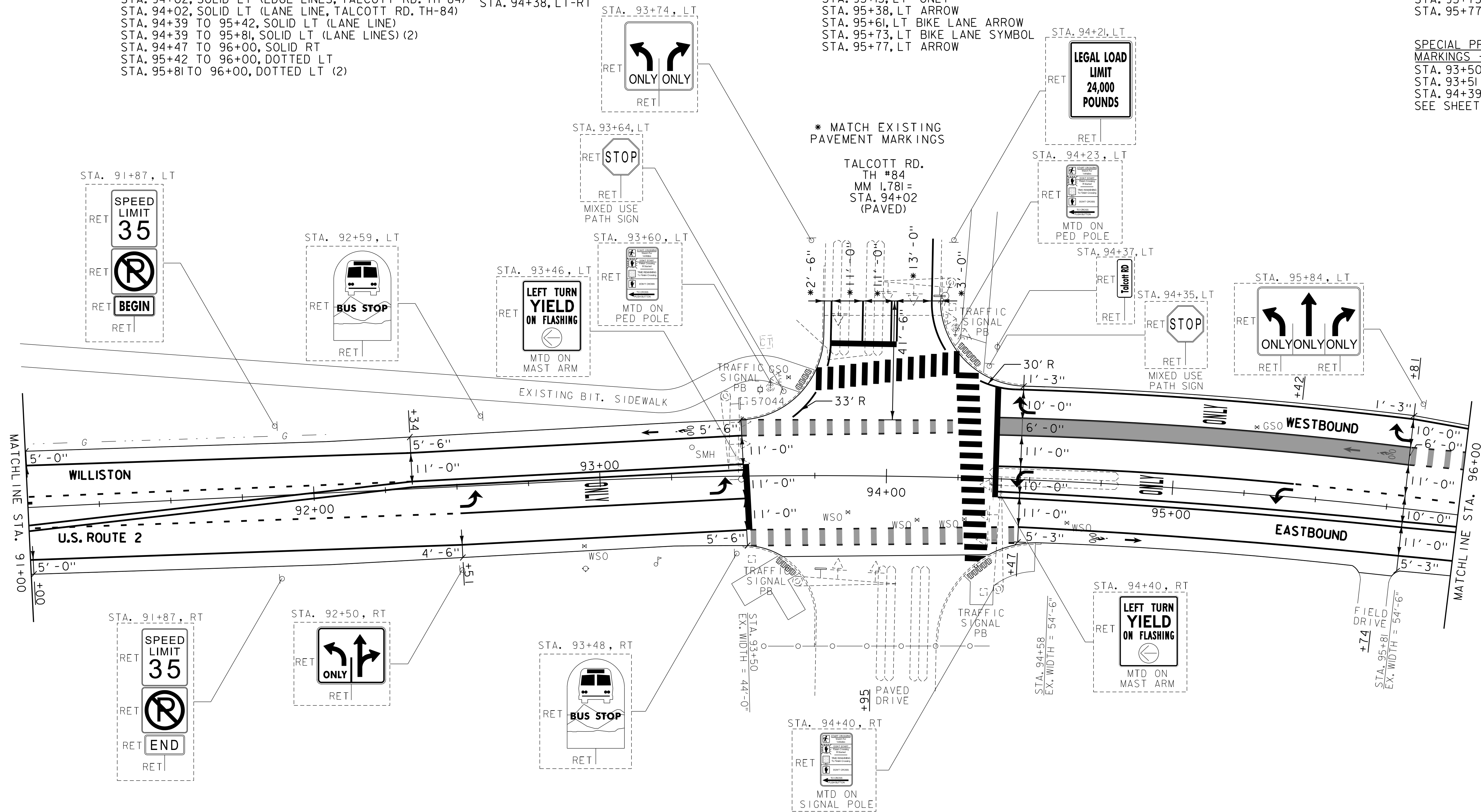
DURABLE 24 INCH STOP BAR (OPTION ITEMS),  
TEMPORARY 24 INCH STOP BAR, PAINT  
STA. 94+02, LT (TALCOTT RD. TH-84)  
STA. 94+38, LT-RT

DURABLE LETTER OR SYMBOL (OPTION ITEMS)  
STA. 92+55, RT ARROW  
STA. 92+99, RT "ONLY"  
STA. 93+18, LT BIKE LANE ARROW  
STA. 93+30, LT BIKE LANE SYMBOL  
STA. 93+42, RT ARROW  
STA. 94+47, LT ARROW  
STA. 94+47, LT ARROW  
STA. 94+75, RT BIKE LANE SYMBOL  
STA. 94+93, LT "ONLY"  
STA. 94+87, RT BIKE LANE ARROW  
STA. 95+13, LT "ONLY"  
STA. 95+38, LT ARROW  
STA. 95+61, LT BIKE LANE ARROW  
STA. 95+73, LT BIKE LANE SYMBOL  
STA. 95+77, LT ARROW

DURABLE CROSSWALK MARKING (OPTION ITEMS),  
TEMPORARY CROSSWALK MARKING, PAINT  
STA. 94+02, LT (TALCOTT RD. TH-84)  
STA. 94+27, LT TO 94+29, RT

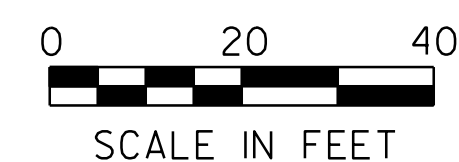
TEMPORARY LETTER OR SYMBOL, PAINT  
STA. 92+55, RT ARROW  
STA. 93+18, LT BIKE LANE ARROW  
STA. 93+30, LT BIKE LANE SYMBOL  
STA. 93+42, RT ARROW  
STA. 94+47, LT ARROW  
STA. 94+47, LT ARROW  
STA. 94+75, RT BIKE LANE SYMBOL  
STA. 94+87, RT BIKE LANE ARROW  
STA. 95+38, LT ARROW  
STA. 95+61, LT BIKE LANE ARROW  
STA. 95+73, LT BIKE LANE SYMBOL  
STA. 95+77, LT ARROW

SPECIAL PROVISION (GREEN PAVEMENT  
MARKINGS - BICYCLE LANE)  
STA. 93+50 TO 94+23, BIKE LANE LT  
STA. 93+51 TO 94+47, BIKE LANE RT  
STA. 94+39 TO 96+00, BIKE LANE LT  
SEE SHEET 15



NOTES:

- FOR LEGENDS, SEE SHEETS 3-4.
- ALL EXISTING SIGNS NOT SHOWN ON THE PLANS SHALL BE RETAINED.
- PRIOR TO COLD PLANING, ANY VEHICLE LOOP DETECTORS SHALL BE SAWCUT AT THE FACE OF CURB IN FRONT OF PULLBOXES AT A DEPTH OF 5" - 6" INCHES. THIS IS TO ENSURE THAT NO OTHER CONDUIT SHALL BE PULLED DOWN BY THE COLD PLANNER.
- ALL UTILITY LOCATIONS SHOWN ARE APPROXIMATE AND SHOULD BE VERIFIED PRIOR TO ANY WORK COMMENCING.



PROJECT NAME: WILLISTON  
PROJECT NUMBER: STP FPAV(10)  
FILE NAME: z17v027bdr.dgn  
PROJECT LEADER: G. EDWARDS  
DESIGNED BY: D. BARNES  
PLAN SHEET 3

PLOT DATE: 11/20/2018  
DRAWN BY: D. BARNES  
CHECKED BY: J. LITTLE  
SHEET 22 OF 48

STEEL BEAM GUARDRAIL GALVANIZED  
 STA. 99+69.5 TO 100+07, LT  
 STA. 100+18.5 TO 100+56, RT

ADJUST HEIGHT OF GUARDRAIL  
 STA. 100+07 TO 101+00, LT  
 STA. 100+56 TO 101+00, RT

DURABLE 4 INCH WHITE LINE (OPTION ITEMS)  
 TEMPORARY 4 INCH WHITE LINE, PAINT  
 (ALL LINES WILL INCLUDE EDGE LINE BREAKS  
 AND RADII FOR SIDE ROADS)  
 STA. 96+00 TO 101+00, SOLID LT & RT  
 STA. 96+00 TO 96+96, DOTTED LT (2)  
 STA. 96+00 TO 97+66, DOTTED LT

DURABLE 4 INCH YELLOW LINE (OPTION ITEMS)  
 TEMPORARY 4 INCH YELLOW LINE, PAINT  
 (ALL LINES WILL INCLUDE  $\phi$  BREAKS FOR SIDE ROADS)  
 STA. 96+00 TO 98+36, SOLID LT & RT  
 STA. 98+36 TO 101+00, DOUBLE SOLID LT & RT

REMOVING SIGNS  
 (NO FEDERAL PARTICIPATION)  
 AS SHOWN - 3

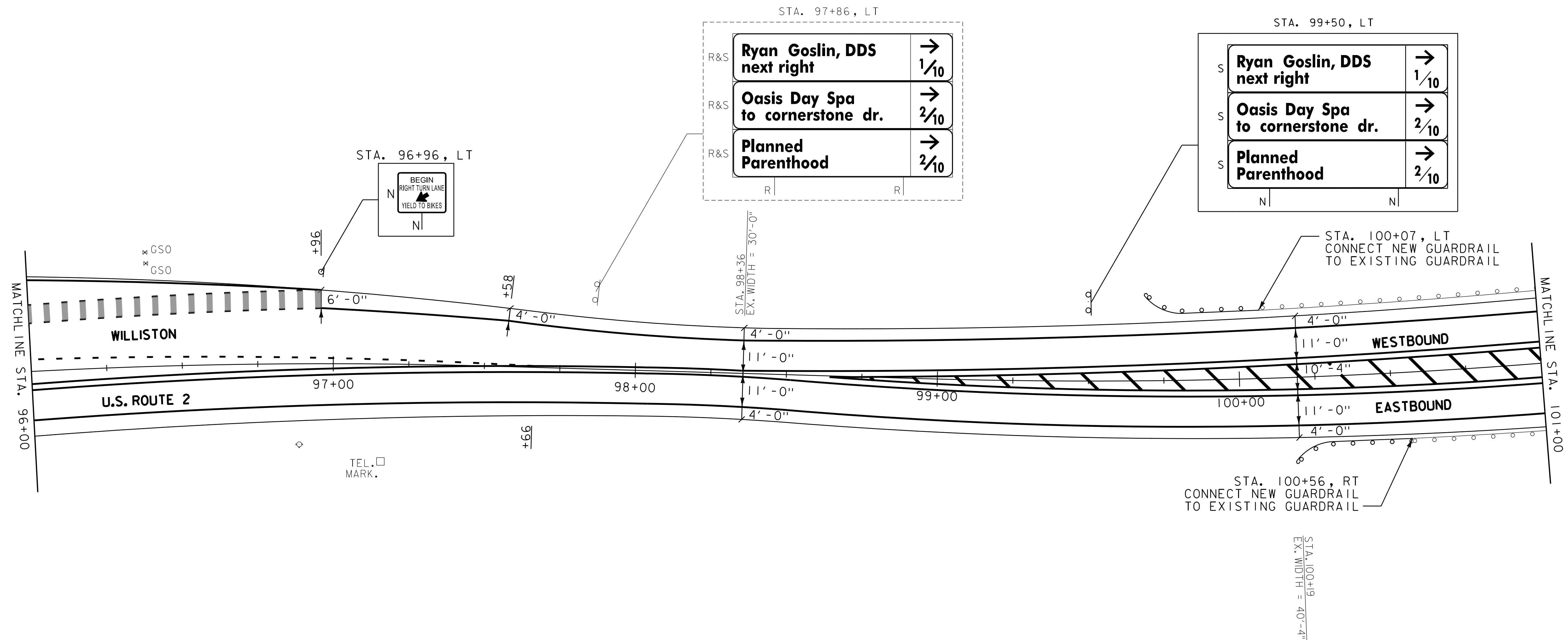
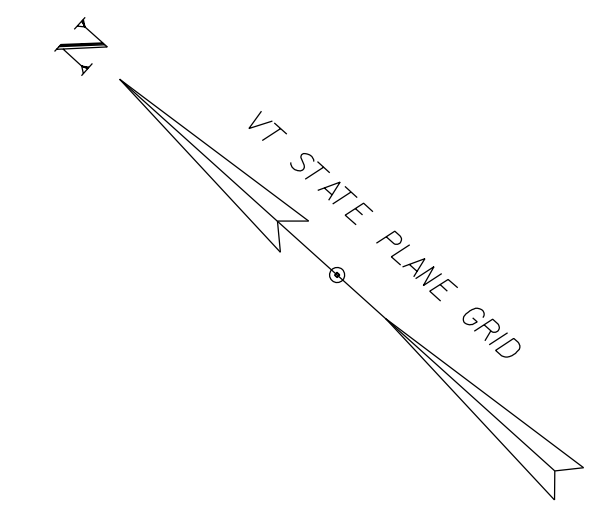
SPECIAL PROVISION (GREEN PAVEMENT  
 MARKINGS - BICYCLE LANE)  
 STA. 96+00 TO 96+96, BIKE LANE LT  
 SEE SHEET 15

ANCHOR FOR STEEL BEAM RAIL  
 STA. 99+69.5, LT  
 STA. 100+18.5, RT

REMOVAL AND DISPOSAL OF GUARDRAIL  
 STA. 99+69.5 TO 100+07, LT  
 STA. 100+18.5 TO 100+56, RT

DURABLE 8 INCH YELLOW LINE (OPTION ITEMS)  
 TEMPORARY 8 INCH YELLOW LINE, PAINT  
 STA. 98+64 TO 101+00, SOLID LT & RT (DIAGONALS)

ERECTING SALVAGED SIGNS  
 (NO FEDERAL PARTICIPATION)  
 AS SHOWN - 3



NOTES:

1. FOR LEGENDS, SEE SHEETS 3-4.
2. ALL EXISTING SIGNS NOT SHOWN ON THE PLANS SHALL BE RETAINED.
3. ALL UTILITY LOCATIONS SHOWN ARE APPROXIMATE AND SHOULD BE VERIFIED PRIOR TO ANY WORK COMMENCING.



PROJECT NAME: WILLISTON  
 PROJECT NUMBER: STP FPAV(10)  
 FILE NAME: z17v027bdr.dgn  
 PROJECT LEADER: G. EDWARDS  
 DESIGNED BY: D. BARNES  
 PLAN SHEET 4

PLOT DATE: 11/20/2018  
 DRAWN BY: D. BARNES  
 CHECKED BY: J. LITTLE  
 SHEET 23 OF 48

STEEL BEAM GUARDRAIL GALVANIZED  
STA. 104+56 TO 104+93.5, RT

ADJUST HEIGHT OF GUARDRAIL  
STA. 101+00 TO 104+56, RT  
STA. 101+00 TO 105+03, LT

DURABLE 4 INCH WHITE LINE (OPTION ITEMS)  
TEMPORARY 4 INCH WHITE LINE, PAINT

(ALL LINES WILL INCLUDE EDGE LINE BREAKS AND RADII FOR SIDE ROADS)  
STA. 101+00 TO 104+69, SOLID LT  
STA. 101+00 TO 106+00, SOLID RT  
STA. 102+00 TO 104+13, DOTTED RT  
STA. 104+13 TO 105+20, SOLID RT (LANE LINE)  
STA. 104+69 TO 105+63, DOTTED LT (2)  
STA. 105+28, SOLID LT (EDGE LINES, TALCOTT RD. TH-84)  
STA. 105+28, SOLID LT (LANE LINE, TALCOTT RD. TH-84)  
STA. 105+63 TO 106+00, SOLID LT (LANE LINES) (2)

DURABLE 4 INCH YELLOW LINE (OPTION ITEMS)  
TEMPORARY 4 INCH YELLOW LINE, PAINT

(ALL LINES WILL INCLUDE C BREAKS FOR SIDE ROADS)  
STA. 101+00 TO 104+07, DOUBLE SOLID LT & RT  
STA. 104+07 TO 104+83, DOUBLE SOLID LT  
STA. 105+28, DOUBLE SOLID LT (TALCOTT RD. TH-84)  
STA. 105+56 TO 106+00, DOUBLE SOLID LT & RT

DURABLE 24 INCH STOP BAR (OPTION ITEMS)  
TEMPORARY 24 INCH STOP BAR, PAINT

STA. 105+28, LT (TALCOTT RD. TH-84)

SPECIAL PROVISION (GREEN PAVEMENT MARKINGS - BICYCLE LANE)

STA. 104+69 TO 106+00, BIKE LANE LT  
SEE SHEET 15

ANCHOR FOR STEEL BEAM RAIL  
STA. 104+93.5, RT

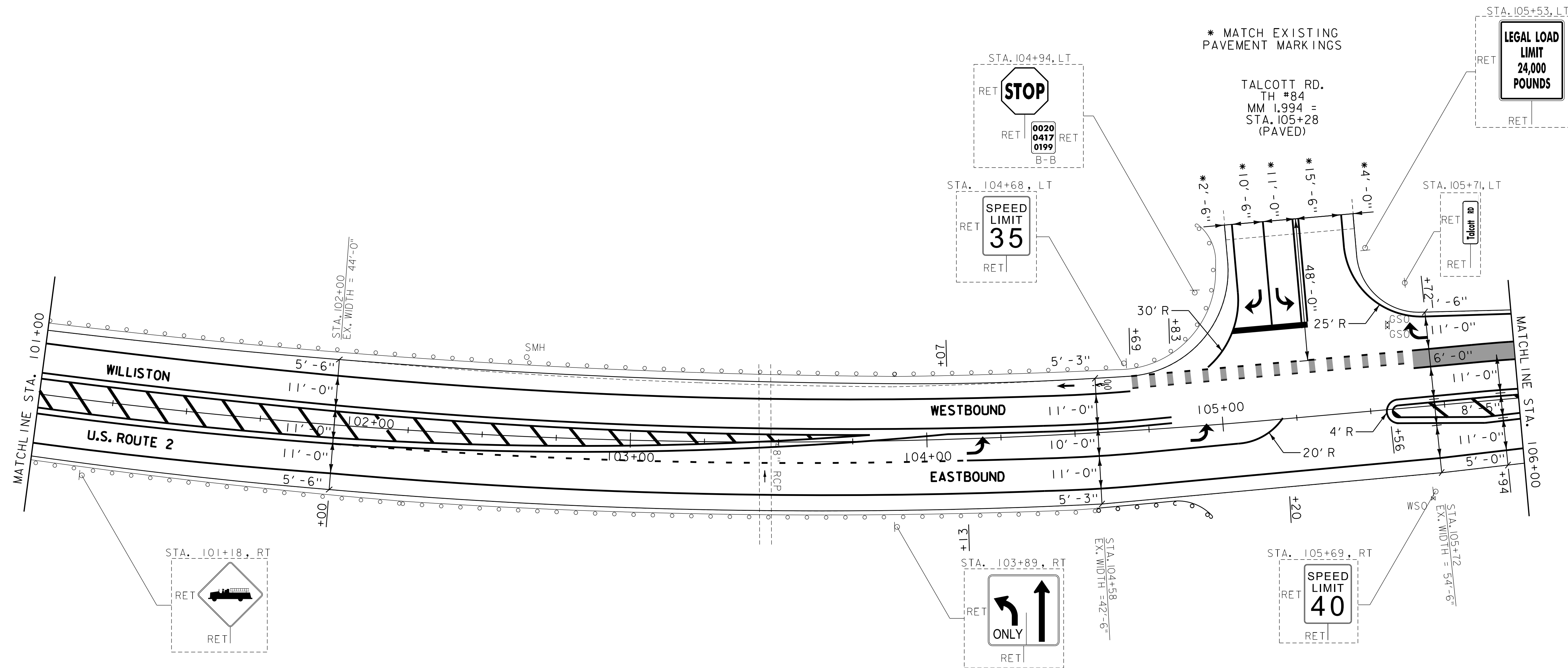
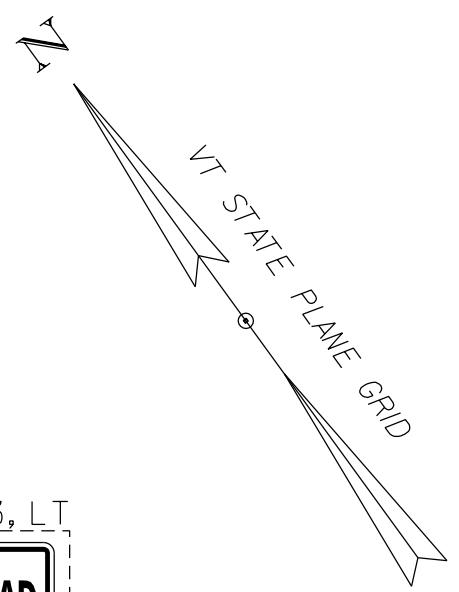
REMOVAL AND DISPOSAL OF GUARDRAIL  
STA. 104+56 TO 104+93.5, RT

DURABLE 8 INCH YELLOW LINE (OPTION ITEMS)  
TEMPORARY 8 INCH YELLOW LINE, PAINT

STA. 101+00 TO 103+81, SOLID LT & RT (DIAGONALS)  
STA. 105+56 TO 106+00, SOLID LT & RT (DIAGONALS)

DURABLE LETTER OR SYMBOL (OPTION ITEMS)  
TEMPORARY LETTER OR SYMBOL, PAINT

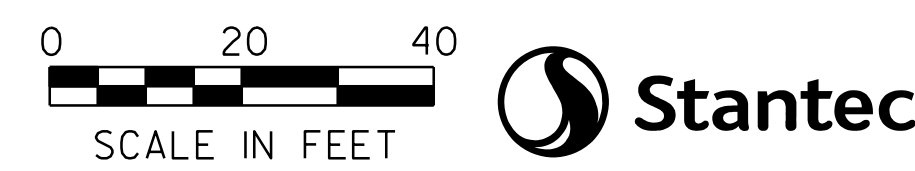
STA. 104+17, RT ARROW  
STA. 104+48, LT BIKE LANE ARROW  
STA. 104+60, LT BIKE LANE SYMBOL  
STA. 104+93, RT ARROW  
STA. 105+28, LT ARROW (2) (TALCOTT RD. TH-84)  
STA. 105+67, LT ARROW



NOTES:

1. FOR LEGENDS, SEE SHEETS 3-4.
2. ALL EXISTING SIGNS NOT SHOWN ON THE PLANS SHALL BE RETAINED.
3. ALL UTILITY LOCATIONS SHOWN ARE APPROXIMATE AND SHOULD BE VERIFIED PRIOR TO ANY WORK COMMENCING.

PROJECT NAME: WILLISTON	
PROJECT NUMBER: STP FPAV(10)	
FILE NAME: z17v027bdr.dgn	PLOT DATE: 11/20/2018
PROJECT LEADER: G. EDWARDS	DRAWN BY: D. BARNES
DESIGNED BY: D. BARNES	CHECKED BY: J. LITTLE
PLAN SHEET 5	SHEET 24 OF 48



ADJUST ELEVATION OF VALVE BOX  
(NO FEDERAL/STATE PARTICIPATION)  
STA. 106+43, RT  
STA. 106+57, RT

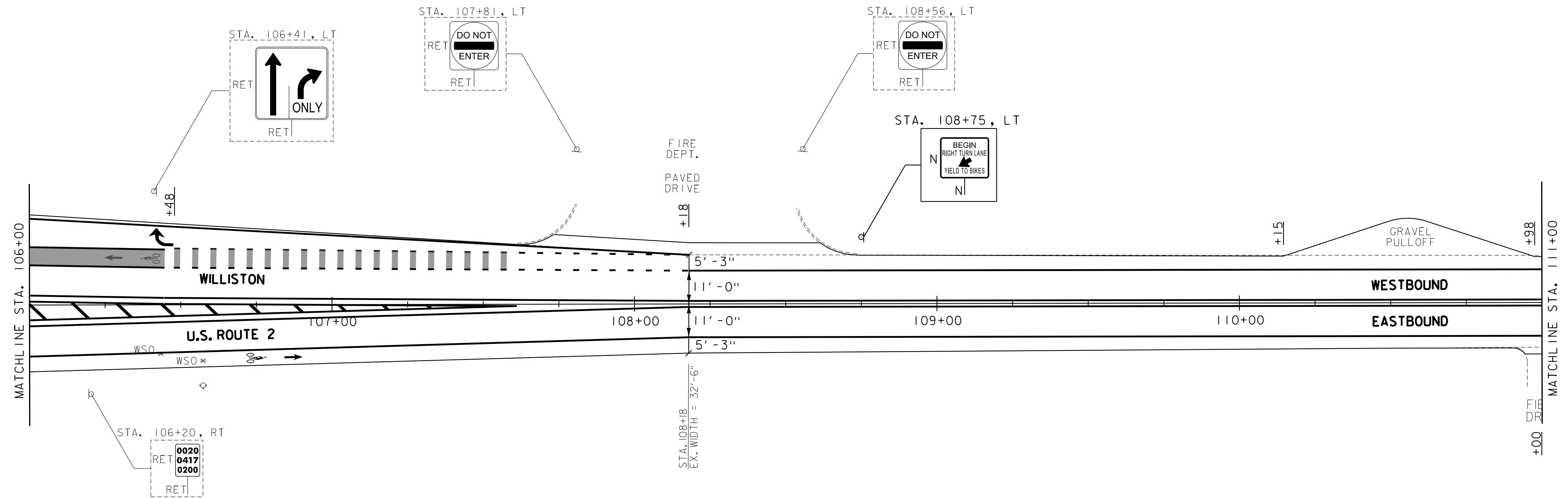
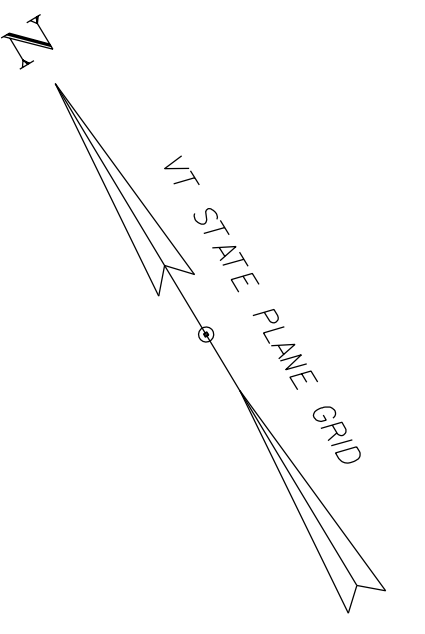
DURABLE 4 INCH WHITE LINE (OPTION ITEMS)  
TEMPORARY 4 INCH WHITE LINE, PAINT  
(ALL LINES WILL INCLUDE EDGE LINE BREAKS  
AND RADII FOR SIDE ROADS)  
STA. 106+00 TO 106+48, SOLID LT (LANE LINES) (2)  
STA. 106+00 TO 111+00, SOLID LT & RT  
STA. 106+48 TO 108+18, DOTTED LT (2)

DURABLE 4 INCH YELLOW LINE (OPTION ITEMS)  
TEMPORARY 4 INCH YELLOW LINE, PAINT  
(ALL LINES WILL INCLUDE  $\phi$  BREAKS FOR SIDE ROADS)  
STA. 106+00 TO 108+18, DOUBLE SOLID LT & RT  
STA. 108+18 TO 111+00, SOLID LT & RT

DURABLE 8 INCH YELLOW LINE (OPTION ITEMS)  
TEMPORARY 8 INCH YELLOW LINE, PAINT  
STA. 106+00 TO 107+61, SOLID LT & RT (DIAGONALS)

DURABLE LETTER OR SYMBOL (OPTION ITEMS)  
TEMPORARY LETTER OR SYMBOL, PAINT  
STA. 106+28, LT BIKE LANE ARROW  
STA. 106+40, LT BIKE LANE SYMBOL  
STA. 106+44, LT ARROW  
STA. 106+75, RT BIKE LANE SYMBOL  
STA. 106+87, RT BIKE LANE ARROW

SPECIAL PROVISION (GREEN PAVEMENT  
MARKINGS - BICYCLE LANE)  
STA. 106+00 TO 107+58, BIKE LANE LT  
SEE SHEET 15



NOTES:

1. FOR LEGENDS, SEE SHEETS 3-4.
2. ALL EXISTING SIGNS NOT SHOWN ON THE PLANS SHALL BE RETAINED.
3. ALL UTILITY LOCATIONS SHOWN ARE APPROXIMATE AND SHOULD BE VERIFIED PRIOR TO ANY WORK COMMENCING.

PROJECT NAME: WILLISTON  
PROJECT NUMBER: STP FPAV(10)

FILE NAME: z17v027bdr.dgn  
PROJECT LEADER: G. EDWARDS  
DESIGNED BY: D. BARNES  
PLAN SHEET 6

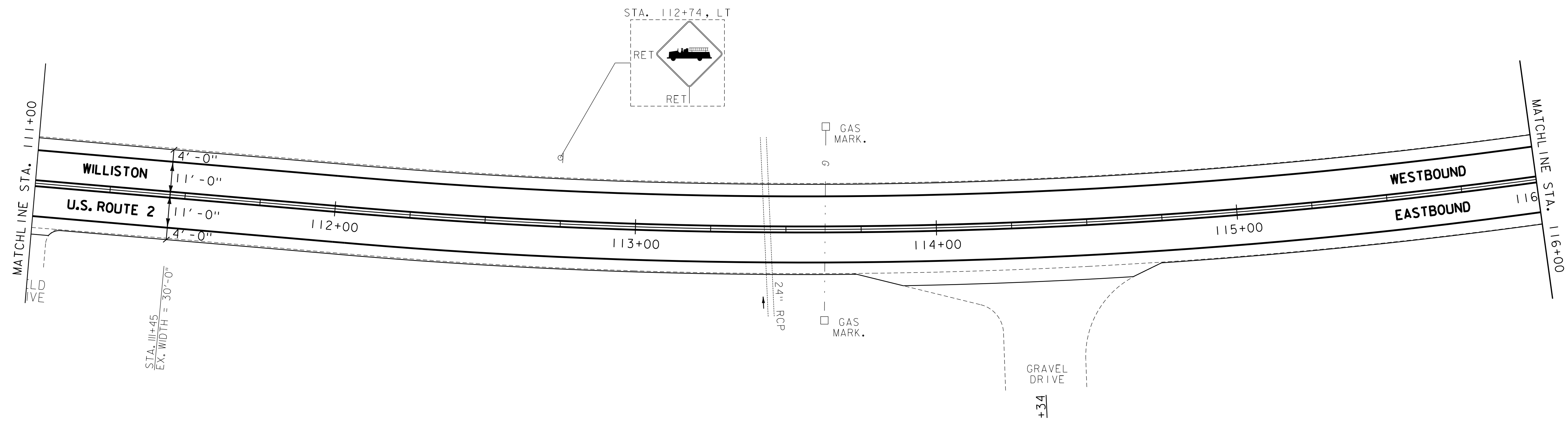
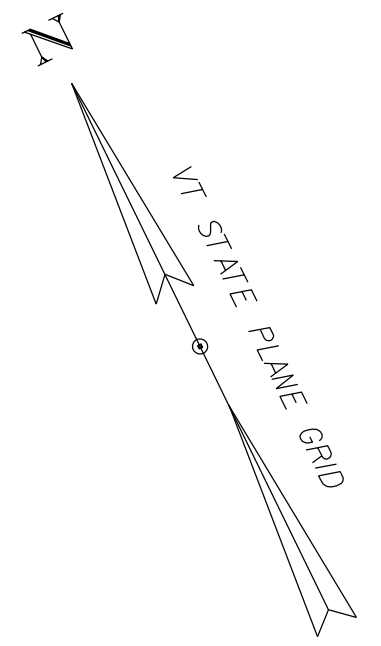
PLOT DATE: 11/20/2018  
DRAWN BY: D. BARNES  
CHECKED BY: J. LITTLE  
SHEET 25 OF 48





DURABLE 4 INCH WHITE LINE (OPTION ITEMS)  
 TEMPORARY 4 INCH WHITE LINE, PAINT  
 (ALL LINES WILL INCLUDE EDGE LINE BREAKS  
 AND RADII FOR SIDE ROADS)  
 STA. 111+00 TO 116+00, SOLID LT & RT

DURABLE 4 INCH YELLOW LINE (OPTION ITEMS)  
 TEMPORARY 4 INCH YELLOW LINE, PAINT  
 (ALL LINES WILL INCLUDE  $\phi$  BREAKS FOR SIDE ROADS)  
 STA. 111+00 TO 116+00, SOLID LT & RT



NOTES:

1. FOR LEGENDS, SEE SHEETS 3-4.
2. ALL EXISTING SIGNS NOT SHOWN ON THE PLANS SHALL BE RETAINED.
3. ALL UTILITY LOCATIONS SHOWN ARE APPROXIMATE AND SHOULD BE VERIFIED PRIOR TO ANY WORK COMMENCING.



PROJECT NAME: WILLISTON  
 PROJECT NUMBER: STP FPAV(10)  
 FILE NAME: z17v027bdr.dgn  
 PROJECT LEADER: G. EDWARDS  
 DESIGNED BY: D. BARNES  
 PLAN SHEET 7

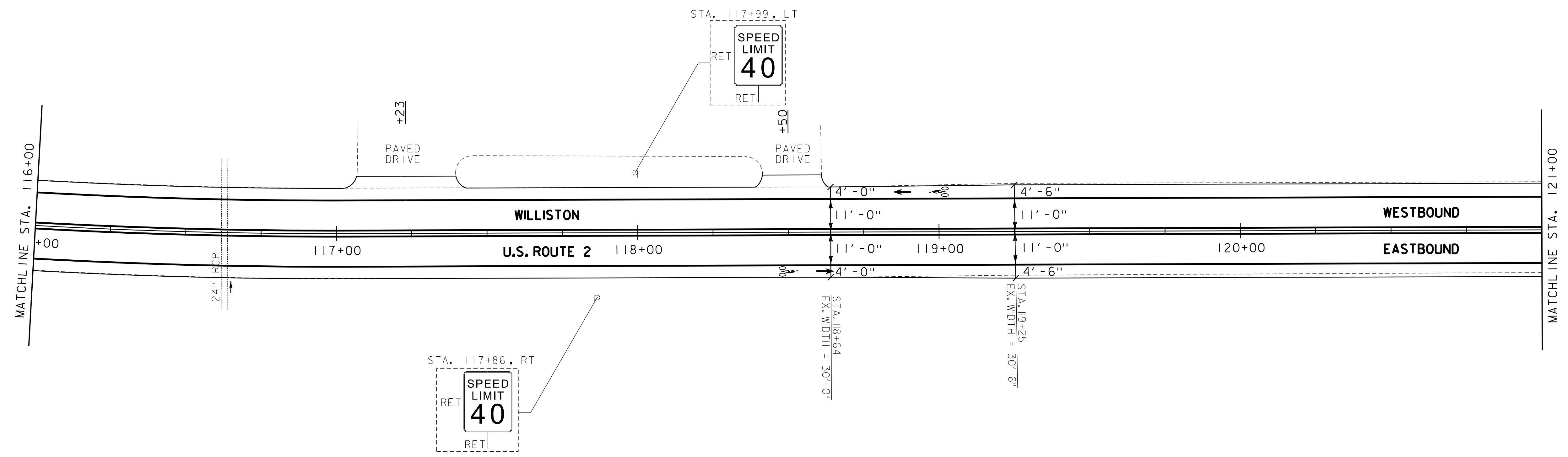
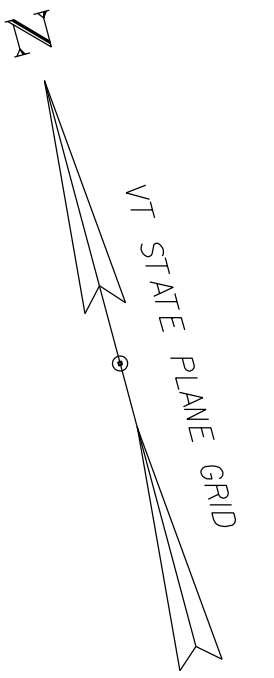
PLOT DATE: 11/20/2018  
 DRAWN BY: D. BARNES  
 CHECKED BY: J. LITTLE  
 SHEET 26 OF 48



DURABLE 4 INCH WHITE LINE (OPTION ITEMS)  
 TEMPORARY 4 INCH WHITE LINE, PAINT  
 (ALL LINES WILL INCLUDE EDGE LINE BREAKS  
 AND RADII FOR SIDE ROADS)  
 STA. 116+00 TO 121+00, SOLID LT & RT

DURABLE 4 INCH YELLOW LINE (OPTION ITEMS)  
 TEMPORARY 4 INCH YELLOW LINE, PAINT  
 (ALL LINES WILL INCLUDE  $\phi$  BREAKS FOR SIDE ROADS)  
 STA. 116+00 TO 121+00, SOLID LT & RT

DURABLE LETTER OR SYMBOL (OPTION ITEMS)  
 TEMPORARY LETTER OR SYMBOL, PAINT  
 STA. 118+50, RT BIKE LANE SYMBOL  
 STA. 118+62, RT BIKE LANE ARROW  
 STA. 118+88, LT BIKE LANE ARROW  
 STA. 119+00, LT BIKE LANE SYMBOL



**NOTES:**

- FOR LEGENDS, SEE SHEETS 3-4.
- ALL EXISTING SIGNS NOT SHOWN ON THE PLANS SHALL BE RETAINED.
- ALL UTILITY LOCATIONS SHOWN ARE APPROXIMATE AND SHOULD BE VERIFIED PRIOR TO ANY WORK COMMENCING.

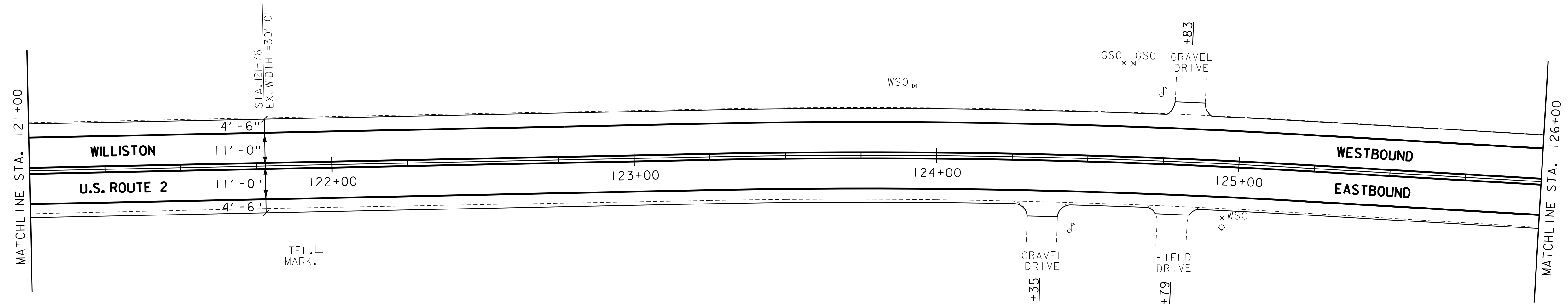
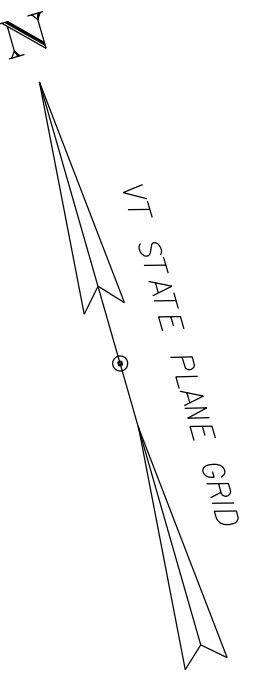


PROJECT NAME: WILLISTON  
 PROJECT NUMBER: STP FPAV(10)  
 FILE NAME: z17v027bdr.dgn  
 PROJECT LEADER: G. EDWARDS  
 DESIGNED BY: D. BARNES  
 PLAN SHEET 8

PLOT DATE: 11/20/2018  
 DRAWN BY: D. BARNES  
 CHECKED BY: J. LITTLE  
 SHEET 27 OF 48

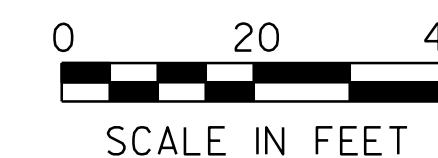
DURABLE 4 INCH WHITE LINE (OPTION ITEMS)  
 TEMPORARY 4 INCH WHITE LINE, PAINT  
 (ALL LINES WILL INCLUDE EDGE LINE BREAKS  
 AND RADII FOR SIDE ROADS)  
 STA. 121+00 TO 126+00, SOLID LT & RT

DURABLE 4 INCH YELLOW LINE (OPTION ITEMS)  
 TEMPORARY 4 INCH YELLOW LINE, PAINT  
 (ALL LINES WILL INCLUDE  $\phi$  BREAKS FOR SIDE ROADS)  
 STA. 121+00 TO 126+00, SOLID LT & RT



NOTES:

1. FOR LEGENDS, SEE SHEETS 3-4.
2. ALL EXISTING SIGNS NOT SHOWN ON THE PLANS SHALL BE RETAINED.
3. ALL UTILITY LOCATIONS SHOWN ARE APPROXIMATE AND SHOULD BE VERIFIED PRIOR TO ANY WORK COMMENCING.

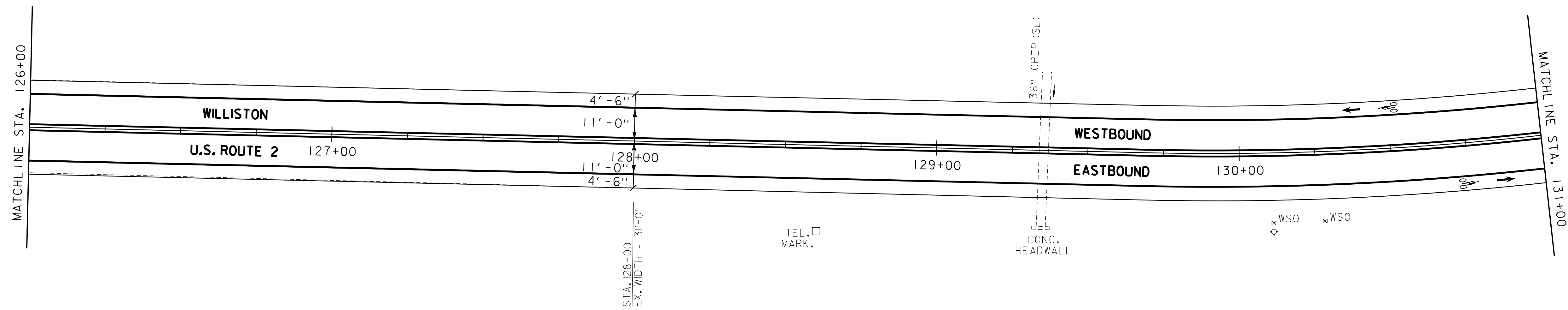
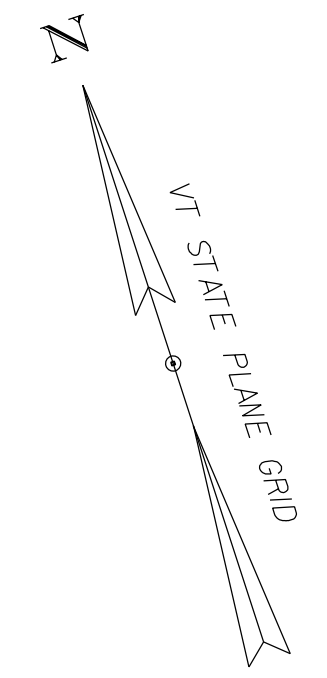


PROJECT NAME: WILLISTON	
PROJECT NUMBER: STP FPAV(10)	
FILE NAME: z17v027bdr.dgn	PLOT DATE: 11/20/2018
PROJECT LEADER: G. EDWARDS	DRAWN BY: D. BARNES
DESIGNED BY: D. BARNES	CHECKED BY: J. LITTLE
PLAN SHEET 9	SHEET 28 OF 48

DURABLE 4 INCH WHITE LINE (OPTION BID ITEMS)  
 TEMPORARY 4 INCH WHITE LINE, PAINT  
 (ALL LINES WILL INCLUDE EDGE LINE BREAKS  
 AND RADII FOR SIDE ROADS)  
 STA. 126+00 TO 131+00, SOLID LT & RT

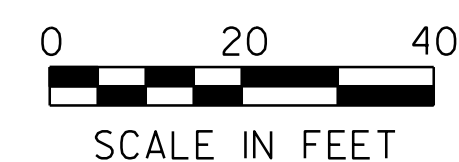
DURABLE 4 INCH YELLOW LINE (OPTION BID ITEMS)  
 TEMPORARY 4 INCH YELLOW LINE, PAINT  
 (ALL LINES WILL INCLUDE  $\phi$  BREAKS FOR SIDE ROADS)  
 STA. 126+00 TO 131+00, SOLID LT & RT

DURABLE LETTER OR SYMBOL (OPTION BID ITEMS)  
 TEMPORARY LETTER OR SYMBOL, PAINT  
 STA. 130+38, LT BIKE LANE ARROW  
 STA. 130+50, LT BIKE LANE SYMBOL  
 STA. 130+75, RT BIKE LANE SYMBOL  
 STA. 130+87, RT BIKE LANE ARROW



NOTES:

1. FOR LEGENDS, SEE SHEETS 3-4.
2. ALL EXISTING SIGNS NOT SHOWN ON THE PLANS SHALL BE RETAINED.
3. ALL UTILITY LOCATIONS SHOWN ARE APPROXIMATE AND SHOULD BE VERIFIED PRIOR TO ANY WORK COMMENCING.

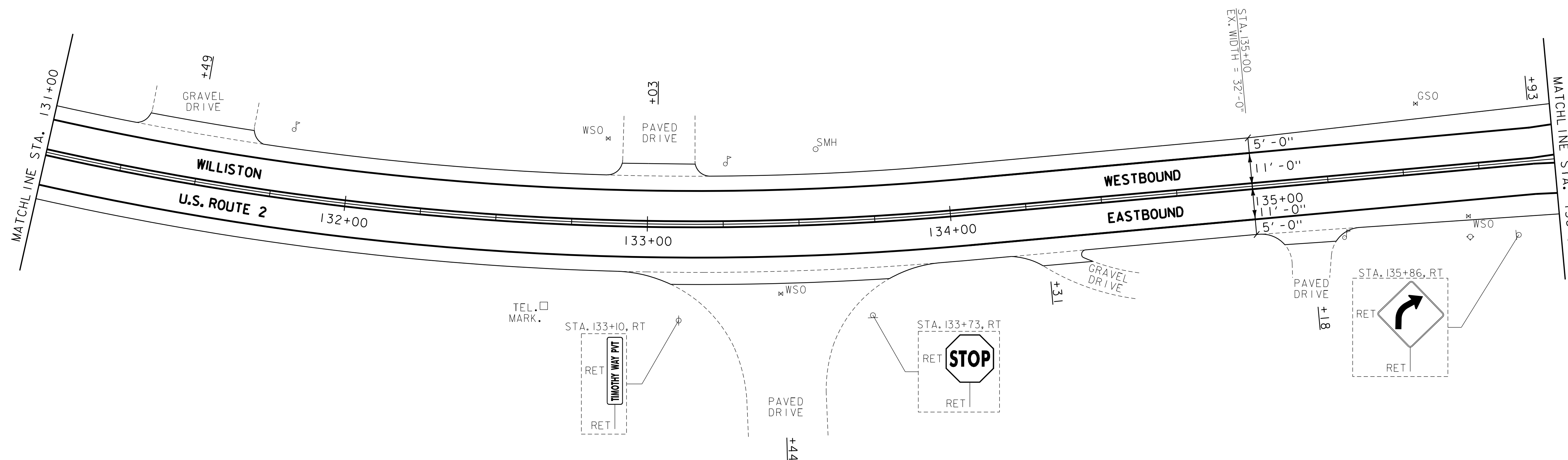
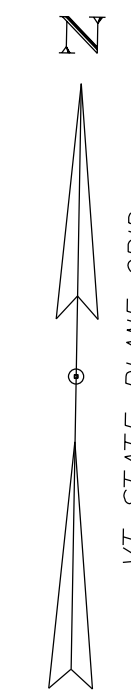


PROJECT NAME: WILLISTON	
PROJECT NUMBER: STP FPAV(10)	
FILE NAME: z17v027bdr.dgn	PLOT DATE: 11/20/2018
PROJECT LEADER: G. EDWARDS	DRAWN BY: D. BARNES
DESIGNED BY: D. BARNES	CHECKED BY: J. LITTLE
PLAN SHEET 10	SHEET 29 OF 48

ADJUST ELEVATION OF VALVE BOX  
(NO FEDERAL/STATE PARTICIPATION)  
STA. 135+70, RT

DURABLE 4 INCH WHITE LINE (OPTION ITEMS)  
TEMPORARY 4 INCH WHITE LINE, PAINT  
(ALL LINES WILL INCLUDE EDGE LINE BREAKS  
AND RADII FOR SIDE ROADS)  
STA. 131+00 TO 136+00, SOLID LT & RT

DURABLE 4 INCH YELLOW LINE (OPTION ITEMS)  
TEMPORARY 4 INCH YELLOW LINE, PAINT  
(ALL LINES WILL INCLUDE  $\phi$  BREAKS FOR SIDE ROADS)  
STA. 131+00 TO 135+93, SOLID LT & RT  
STA. 135+93 TO 136+00, DOUBLE SOLID LT & RT



NOTES:

- FOR LEGENDS, SEE SHEETS 3-4.
- ALL EXISTING SIGNS NOT SHOWN ON THE PLANS SHALL BE RETAINED.
- ALL UTILITY LOCATIONS SHOWN ARE APPROXIMATE AND SHOULD BE VERIFIED PRIOR TO ANY WORK COMMENCING.



PROJECT NAME: WILLISTON  
PROJECT NUMBER: STP FPAV(10)

FILE NAME: z17v027bdr.dgn  
PROJECT LEADER: G. EDWARDS  
DESIGNED BY: D. BARNES  
PLAN SHEET 11

PLOT DATE: 11/20/2018  
DRAWN BY: D. BARNES  
CHECKED BY: J. LITTLE  
SHEET 30 OF 48

CHANGING ELEVATION OF SEWER MANHOLES (NO FEDERAL/STATE PARTICIPATION)  
 STA. 136+05, LT  
 STA. 138+04, LT  
 STA. 141+19, LT

STEEL BEAM GUARDRAIL, GALVANIZED  
 STA. 140+02 TO 140+89.5, RT

ANCHOR FOR STEEL BEAM RAIL  
 STA. 140+02, RT  
 STA. 140+89.5, RT

REMOVAL AND DISPOSAL OF GUARDRAIL  
 STA. 140+02 TO 140+89.5, RT

DURABLE 4 INCH WHITE LINE (OPTION ITEMS)  
TEMPORARY 4 INCH WHITE LINE, PAINT  
 (ALL LINES WILL INCLUDE EDGE LINE BREAKS AND RADII FOR SIDE ROADS)  
 STA. 136+00 TO 139+16, SOLID LT  
 STA. 136+00 TO 142+00, SOLID RT  
 STA. 137+00 TO 138+19, DOTTED RT  
 STA. 138+19 TO 139+58, SOLID RT (LANE LINE)  
 STA. 139+16 TO 140+03, DOTTED LT (2)  
 STA. 139+59, SOLID LT (EDGE LINES, SOUTHRIDGE RD. TH-92)  
 STA. 139+59, SOLID LT (LANE LINE, SOUTHRIDGE RD. TH-92)  
 STA. 140+03 TO 142+00, SOLID LT

DURABLE 4 INCH YELLOW LINE (OPTION ITEMS)  
TEMPORARY 4 INCH YELLOW LINE, PAINT  
 (ALL LINES WILL INCLUDE C BREAKS FOR SIDE ROADS)  
 STA. 136+00 TO 138+19, DOUBLE SOLID LT & RT  
 STA. 138+19 TO 139+33, DOUBLE SOLID LT  
 STA. 139+59, DOUBLE SOLID LT (SOUTHRIDGE RD. TH-92)  
 STA. 140+08 TO 142+00, DOUBLE SOLID LT & RT

DURABLE 8 INCH YELLOW LINE (OPTION ITEMS)  
TEMPORARY 8 INCH YELLOW LINE, PAINT  
 STA. 136+14 TO 137+97, SOLID LT & RT (DIAGONALS)  
 STA. 140+09 TO 141+52, SOLID LT & RT (DIAGONALS)

DURABLE 24 INCH STOP BAR (OPTION ITEMS)  
TEMPORARY 24 INCH STOP BAR, PAINT  
 STA. 139+59, LT (SOUTHRIDGE RD. TH-92)

DURABLE LETTER OR SYMBOL (OPTION ITEMS)  
 STA. 136+75, RT BIKE LANE SYMBOL  
 STA. 136+87, RT BIKE LANE ARROW  
 STA. 138+23, CL ARROW  
 STA. 138+76, CL "ONLY"  
 STA. 138+88, LT BIKE LANE ARROW  
 STA. 139+00, LT BIKE LANE SYMBOL  
 STA. 139+29, CL ARROW  
 STA. 139+59, LT "STOP" (2) (SOUTHRIDGE RD. TH-92)  
 STA. 139+59, LT ARROW (2) (SOUTHRIDGE RD. TH-92)

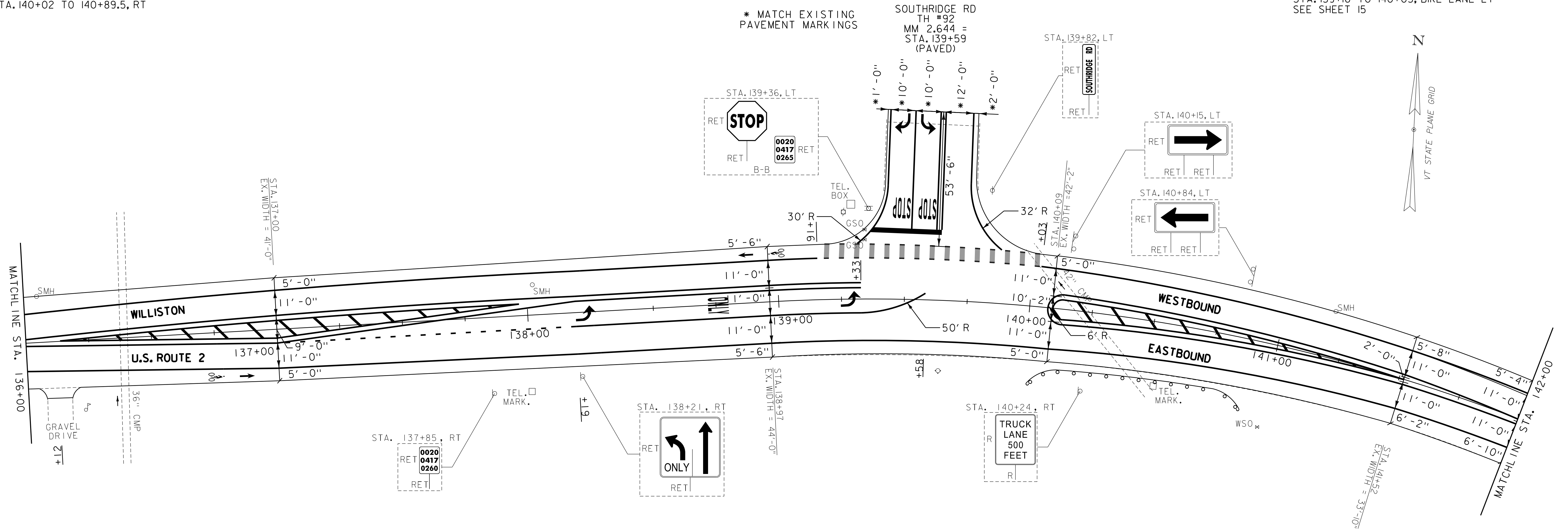
TEMPORARY LETTER OR SYMBOL, PAINT  
 STA. 136+75, RT BIKE LANE SYMBOL  
 STA. 136+87, RT BIKE LANE ARROW  
 STA. 138+23, CL ARROW  
 STA. 138+88, LT BIKE LANE ARROW  
 STA. 139+00, LT BIKE LANE SYMBOL  
 STA. 139+29, CL ARROW  
 STA. 139+59, LT "STOP" (2) (SOUTHRIDGE RD. TH-92)  
 STA. 139+59, LT ARROW (2) (SOUTHRIDGE RD. TH-92)

REMOVING SIGNS  
 AS SHOWN - 1

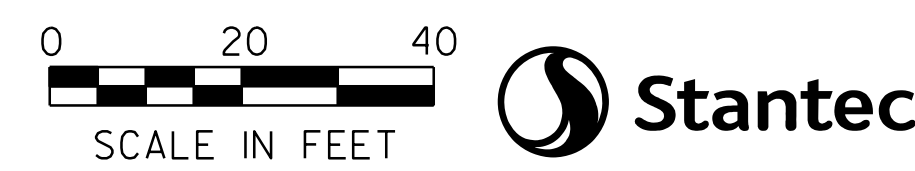
SPECIAL PROVISION (GREEN PAVEMENT MARKINGS - BICYCLE LANE)  
 STA. 139+16 TO 140+03, BIKE LANE LT  
 SEE SHEET 15

* MATCH EXISTING PAVEMENT MARKINGS

SOUTHRIDGE RD TH #92  
 MM 2.644 =  
 STA. 139+59 (PAVED)



- NOTES:
- FOR LEGENDS, SEE SHEETS 3-4.
  - ALL EXISTING SIGNS NOT SHOWN ON THE PLANS SHALL BE RETAINED.
  - ALL UTILITY LOCATIONS SHOWN ARE APPROXIMATE AND SHOULD BE VERIFIED PRIOR TO ANY WORK COMMENCING.



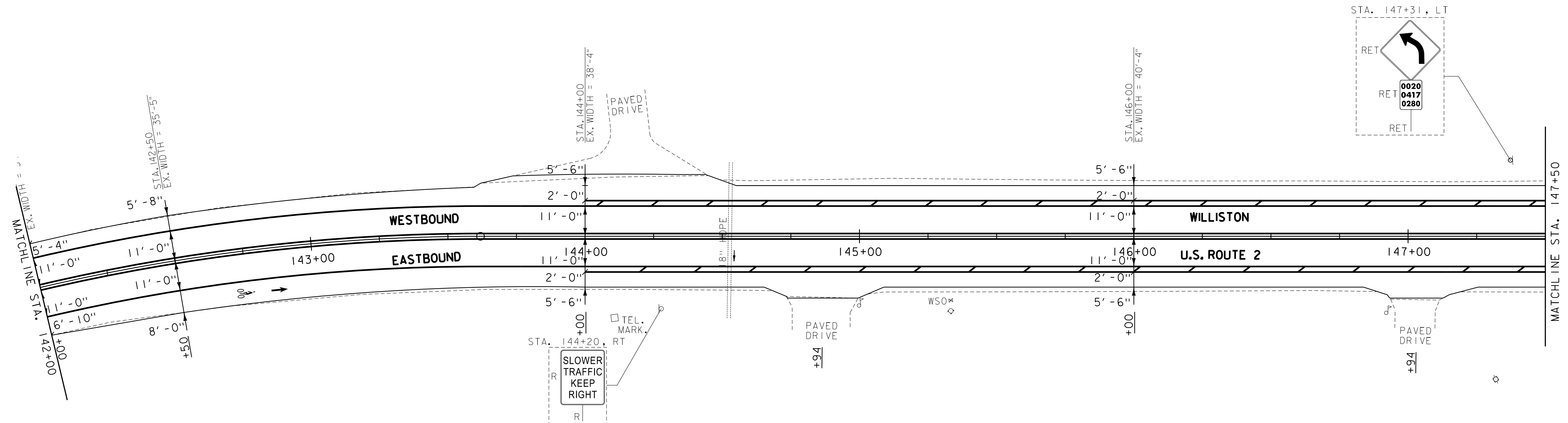
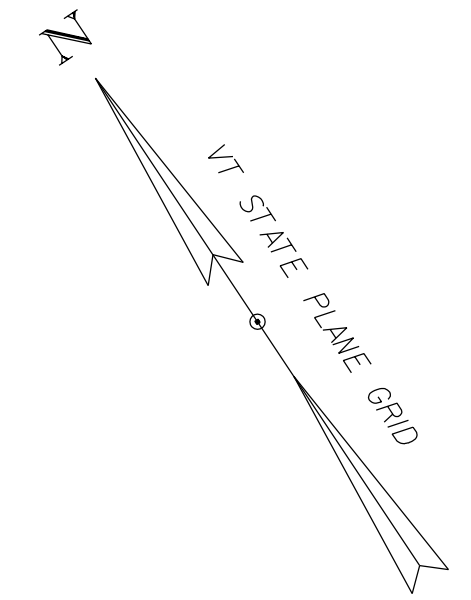
PROJECT NAME: WILLISTON	
PROJECT NUMBER: STP FPAV(10)	
FILE NAME: z17v027bdr.dgn	PLOT DATE: 11/20/2018
PROJECT LEADER: G. EDWARDS	DRAWN BY: D. BARNES
DESIGNED BY: D. BARNES	CHECKED BY: J. LITTLE
PLAN SHEET 12	SHEET 31 OF 48

DURABLE 4 INCH WHITE LINE (OPTION ITEMS)  
 TEMPORARY 4 INCH WHITE LINE, PAINT  
 (ALL LINES WILL INCLUDE EDGE LINE BREAKS  
 AND RADII FOR SIDE ROADS)  
 STA. 142+00 TO 147+50, SOLID LT & RT  
 STA. 144+00 TO 147+50, BIKE LANE LINE LT & RT  
 STA. 144+00 TO 147+50, HATCH BUFFER LT & RT

DURABLE 4 INCH YELLOW LINE (OPTION ITEMS)  
 TEMPORARY 4 INCH YELLOW LINE, PAINT  
 (ALL LINES WILL INCLUDE  $\phi$  BREAKS FOR SIDE ROADS)  
 STA. 142+00 TO 147+50, DOUBLE SOLID RT

DURABLE LETTER OR SYMBOL (OPTION ITEMS)  
 TEMPORARY LETTER OR SYMBOL, PAINT  
 STA. 142+74, RT BIKE LANE SYMBOL  
 STA. 142+86, RT BIKE LANE ARROW

REMOVING SIGNS  
 AS SHOWN - 1



NOTES:

- FOR LEGENDS, SEE SHEETS 3-4.
- ALL EXISTING SIGNS NOT SHOWN ON THE PLANS SHALL BE RETAINED.
- ALL UTILITY LOCATIONS SHOWN ARE APPROXIMATE AND SHOULD BE VERIFIED PRIOR TO ANY WORK COMMENCING.



PROJECT NAME: WILLISTON	PLOT DATE: 11/20/2018
PROJECT NUMBER: STP FPAV(10)	DRAWN BY: G. BURGMEIER
FILE NAME: z17v027bdr-2.dgn	CHECKED BY: J. LITTLE
PROJECT LEADER: G. EDWARDS	SHEET 32 OF 48
DESIGNED BY: G. BURGMEIER	
PLAN SHEET 13	

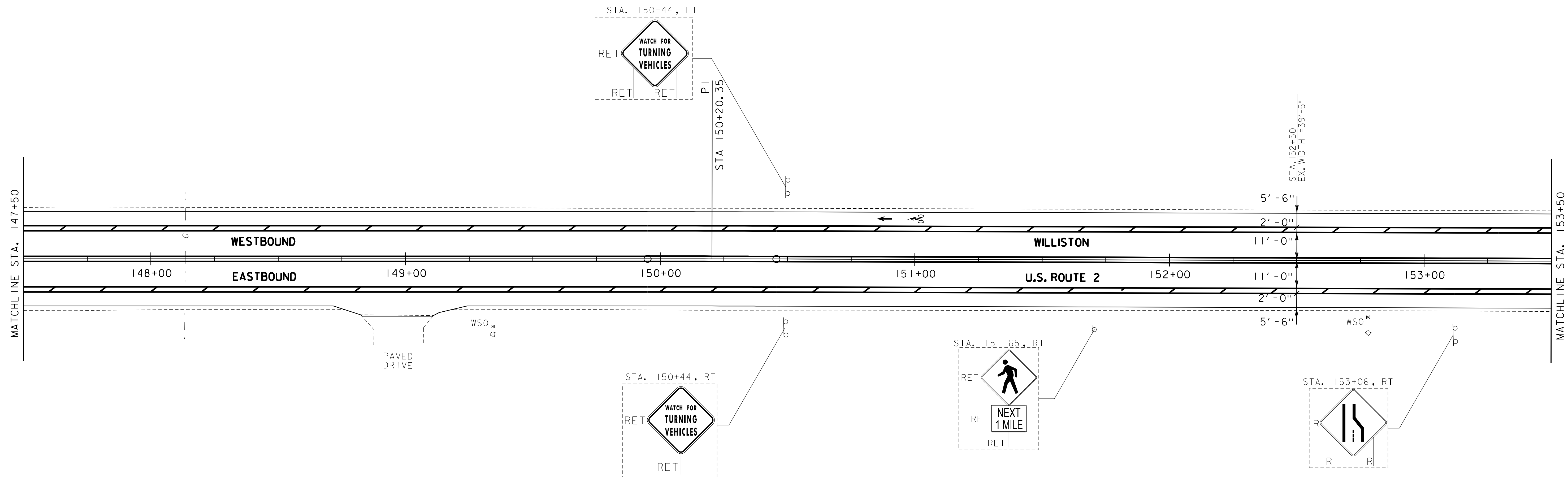
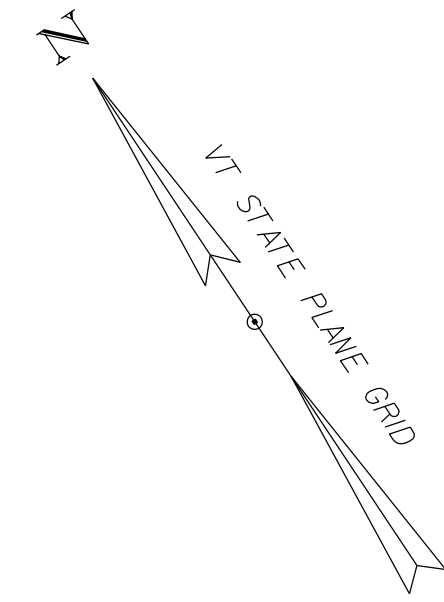


DURABLE 4 INCH WHITE LINE (OPTION ITEMS)  
 TEMPORARY 4 INCH WHITE LINE, PAINT  
 (ALL LINES WILL INCLUDE EDGE LINE BREAKS  
 AND RADII FOR SIDE ROADS)  
 STA. 147+50 TO 153+50, SOLID LT & RT  
 STA. 147+50 TO 153+50, BIKE LANE LINE LT & RT  
 STA. 147+50 TO 153+50, HATCH BUFFER LT & RT

DURABLE 4 INCH YELLOW LINE (OPTION ITEMS)  
 TEMPORARY 4 INCH YELLOW LINE, PAINT  
 (ALL LINES WILL INCLUDE  $\frac{1}{2}$  BREAKS FOR SIDE ROADS)  
 STA. 147+50 TO 153+50, DOUBLE SOLID RT

DURABLE LETTER OR SYMBOL (OPTION ITEMS)  
 TEMPORARY LETTER OR SYMBOL, PAINT  
 STA. 150+88, LT BIKE LANE ARROW  
 STA. 151+00, LT BIKE LANE SYMBOL

REMOVING SIGNS  
 AS SHOWN - I



NOTES:

- FOR LEGENDS, SEE SHEETS 3-4.
- ALL EXISTING SIGNS NOT SHOWN ON THE PLANS SHALL BE RETAINED.
- ALL UTILITY LOCATIONS SHOWN ARE APPROXIMATE AND SHOULD BE VERIFIED PRIOR TO ANY WORK COMMENCING.



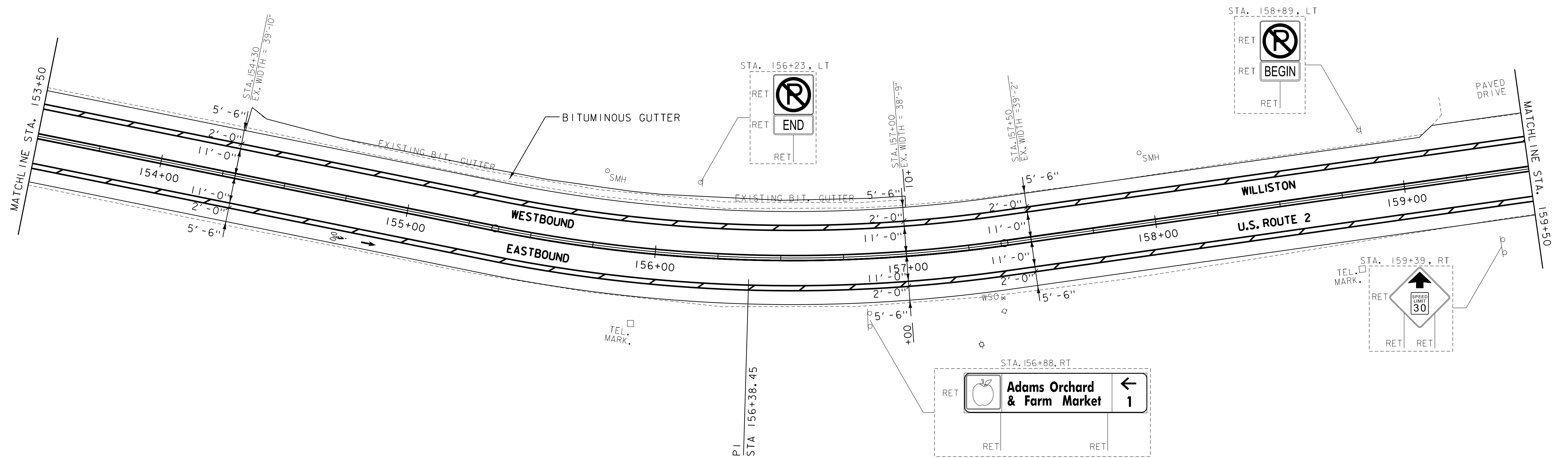
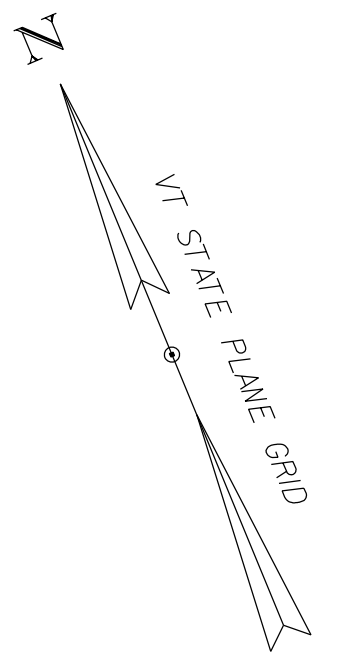
PROJECT NAME: WILLISTON	
PROJECT NUMBER: STP FPAV(10)	
FILE NAME: z17v027bdr-2.dgn	PLOT DATE: 11/20/2018
PROJECT LEADER: G. EDWARDS	DRAWN BY: G. BURGMEIER
DESIGNED BY: G. BURGMEIER	CHECKED BY: J. LITTLE
PLAN SHEET 14	SHEET 33 OF 48

BITUMINOUS CONCRETE GUTTERS  
AND TRAFFIC ISLANDS  
STA. 154+30 TO 157+01, LT  
(SEE SHEET 13)

DURABLE 4 INCH WHITE LINE (OPTION ITEMS)  
TEMPORARY 4 INCH WHITE LINE, PAINT  
(ALL LINES WILL INCLUDE EDGE LINE BREAKS  
AND RADII FOR SIDE ROADS)  
STA. 153+50 TO 159+50, SOLID LT & RT  
STA. 153+50 TO 159+50, BIKE LANE LINE LT & RT  
STA. 153+50 TO 159+50, HATCH BUFFER LT & RT

DURABLE 4 INCH YELLOW LINE (OPTION ITEMS)  
TEMPORARY 4 INCH YELLOW LINE, PAINT  
(ALL LINES WILL INCLUDE  $\phi$  BREAKS FOR SIDE ROADS)  
STA. 153+50 TO 159+50, DOUBLE SOLID RT

DURABLE LETTER OR SYMBOL (OPTION ITEMS)  
TEMPORARY LETTER OR SYMBOL, PAINT  
STA. 154+75, RT BIKE LANE SYMBOL  
STA. 154+87, RT BIKE LANE ARROW



NOTES:

1. FOR LEGENDS, SEE SHEETS 3-4.
2. ALL EXISTING SIGNS NOT SHOWN ON THE PLANS SHALL BE RETAINED.
3. ALL UTILITY LOCATIONS SHOWN ARE APPROXIMATE AND SHOULD BE VERIFIED PRIOR TO ANY WORK COMMENCING.

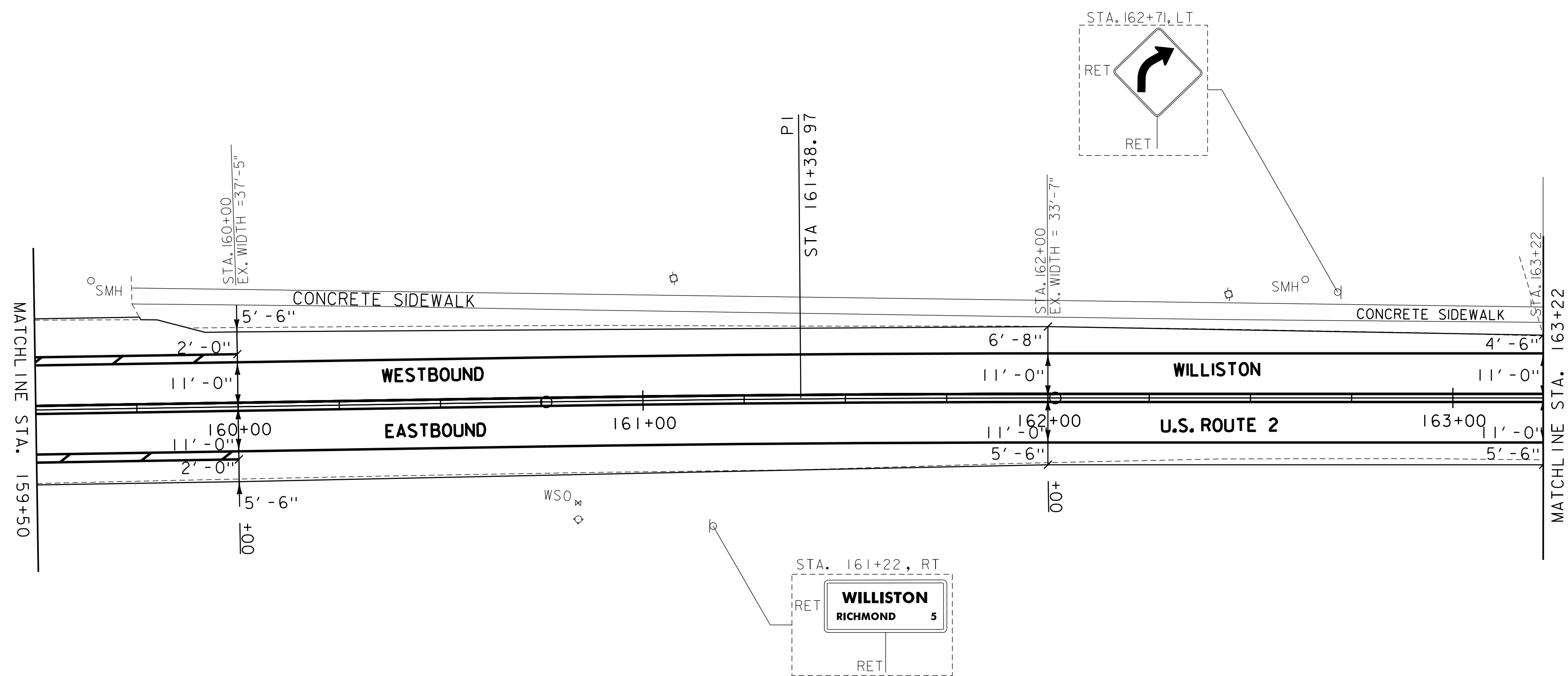
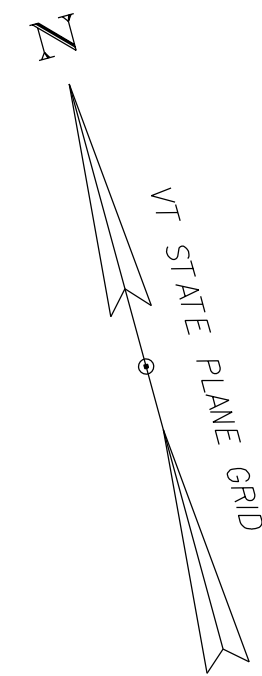


PROJECT NAME: WILLISTON  
PROJECT NUMBER: STP FPAV(10)  
FILE NAME: z17v027bdr-2.dgn  
PROJECT LEADER: G. EDWARDS  
DESIGNED BY: G. BURGMEIER  
PLAN SHEET 15

PLOT DATE: 11/20/2018  
DRAWN BY: G. BURGMEIER  
CHECKED BY: J. LITTLE  
SHEET 34 OF 48

DURABLE 4 INCH WHITE LINE (OPTION BID ITEMS)  
 TEMPORARY 4 INCH WHITE LINE, PAINT  
 (ALL LINES WILL INCLUDE EDGE LINE BREAKS  
 AND RADII FOR SIDE ROADS)  
 STA. 159+50 TO 160+00, BIKE LANE LINE LT & RT  
 STA. 159+50 TO 160+00, HATCH BUFFER LT & RT  
 STA. 159+50 TO 163+22, SOLID LT & RT

DURABLE 4 INCH YELLOW LINE (OPTION BID ITEMS)  
 TEMPORARY 4 INCH YELLOW LINE, PAINT  
 (ALL LINES WILL INCLUDE  $\phi$  BREAKS FOR SIDE ROADS)  
 STA. 159+50 TO 163+22, DOUBLE SOLID RT



NOTES:

1. FOR LEGENDS, SEE SHEETS 3-4.
2. ALL EXISTING SIGNS NOT SHOWN ON THE PLANS SHALL BE RETAINED.
3. ALL UTILITY LOCATIONS SHOWN ARE APPROXIMATE AND SHOULD BE VERIFIED PRIOR TO ANY WORK COMMENCING.



PROJECT NAME: WILLISTON  
 PROJECT NUMBER: STP FPAV(10)  
 FILE NAME: z17v027bdr-2.dgn  
 PROJECT LEADER: G. EDWARDS  
 DESIGNED BY: G. BURGMEIER  
 PLAN SHEET 16

PLOT DATE: 11/20/2018  
 DRAWN BY: G. BURGMEIER  
 CHECKED BY: J. LITTLE  
 SHEET 35 OF 48

RELOCATE MAILBOX, SINGLE SUPPORT  
STA. 166+37, LT

CHANGING ELEVATION OF SEWER MANHOLES  
(NO FEDERAL/STATE PARTICIPATION)  
STA. 164+36, RT

ADJUST ELEVATION OF VALVE BOX  
(NO FEDERAL/STATE PARTICIPATION)  
STA. 164+03, RT  
STA. 164+50, RT

DURABLE 4 INCH WHITE LINE (OPTION ITEMS)  
TEMPORARY 4 INCH WHITE LINE, PAINT  
(ALL LINES WILL INCLUDE EDGE LINE BREAKS  
AND RADII FOR SIDE ROADS)

STA. 163+22 TO 163+95, SOLID RT  
STA. 163+22 TO 163+97, SOLID LT  
STA. 163+95 TO 164+75, DOTTED RT (2)  
STA. 163+97 TO 165+22, DOTTED LT (2)  
STA. 164+37, SOLID LT (EDGE LINES, OLD STAGE RD. TH-12)  
STA. 164+37, SOLID RT (EDGE LINES, TOWER LN. TH-31)  
STA. 164+75 TO 167+00, SOLID RT  
STA. 165+22 TO 166+19, SOLID LT (2)  
STA. 166+19 TO 167+00, SOLID LT

DURABLE 4 INCH YELLOW LINE (OPTION ITEMS)  
TEMPORARY 4 INCH YELLOW LINE, PAINT  
(ALL LINES WILL INCLUDE C BREAKS FOR SIDE ROADS)

STA. 163+22 TO 167+00, SOLID LT & RT  
STA. 164+37, DOUBLE SOLID LT (OLD STAGE RD. TH-12)  
STA. 164+37, DOUBLE SOLID RT (TOWER LN. TH-31)

DURABLE 24 INCH STOP BAR (OPTION ITEMS)  
TEMPORARY 24 INCH STOP BAR, PAINT

STA. 164+37, LT (OLD STAGE RD. TH-12)  
STA. 164+37, RT (TOWER LN. TH-31)

DURABLE LETTER OR SYMBOL (OPTION ITEMS)  
TEMPORARY LETTER OR SYMBOL, PAINT

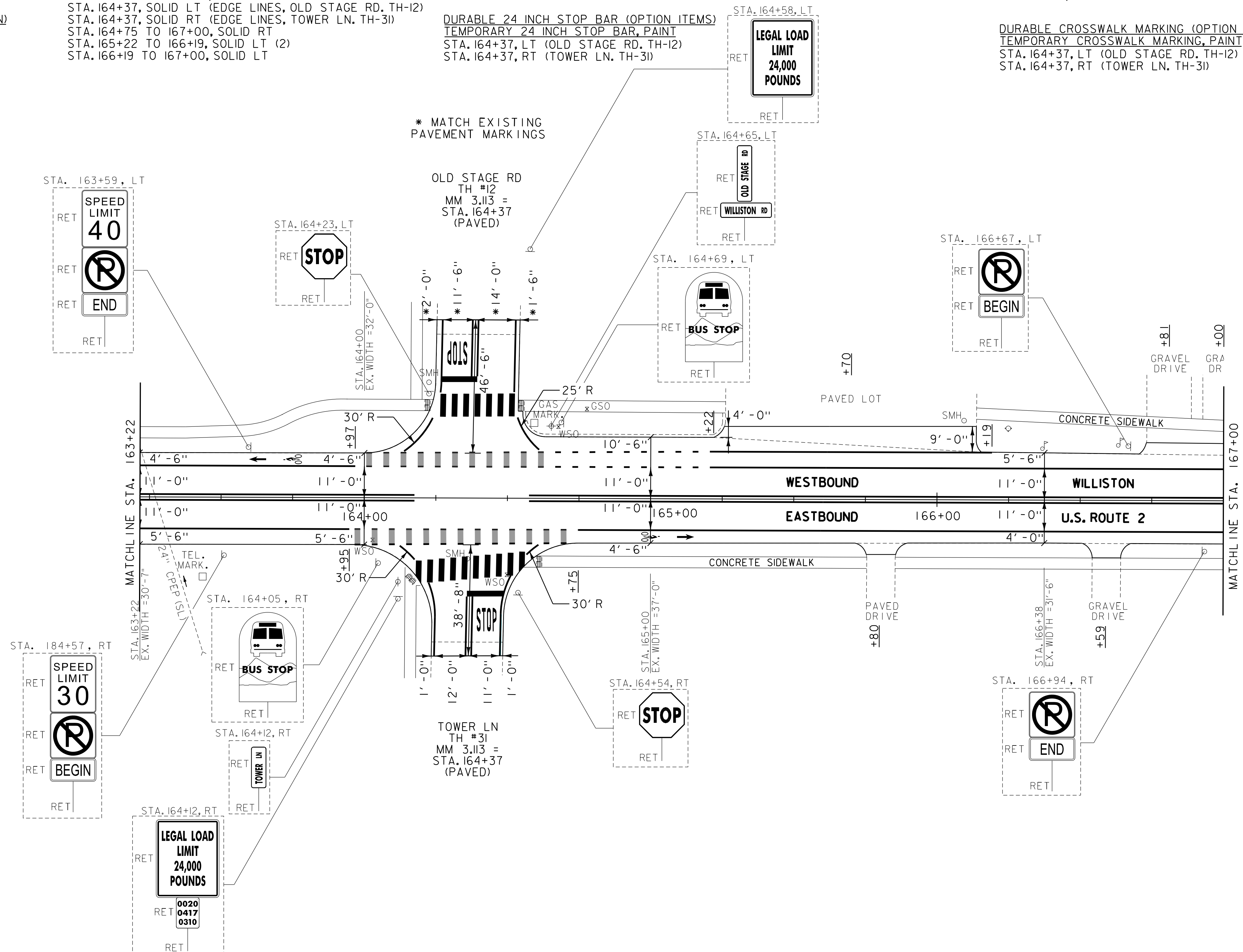
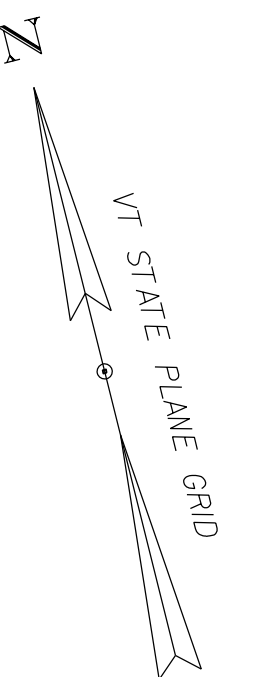
STA. 163+63, LT BIKE LANE ARROW  
STA. 163+75, LT BIKE LANE SYMBOL  
STA. 164+37, LT "STOP" (OLD STAGE RD. TH-12)  
STA. 164+37, RT "STOP" (TOWER LN. TH-31)  
STA. 165+00, RT BIKE LANE SYMBOL  
STA. 165+12, RT BIKE LANE ARROW

DURABLE CROSSWALK MARKING (OPTION ITEMS)  
TEMPORARY CROSSWALK MARKING, PAINT

STA. 164+37, LT (OLD STAGE RD. TH-12)  
STA. 164+37, RT (TOWER LN. TH-31)

SPECIAL PROVISION (GREEN PAVEMENT  
MARKINGS - BICYCLE LANE)

STA. 163+95 TO 164+75, BIKE LANE RT  
STA. 163+97 TO 164+63, BIKE LANE LT  
SEE SHEET 15



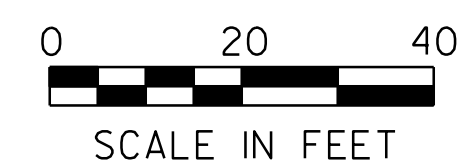
NOTES:

- FOR LEGENDS, SEE SHEETS 3-4.
- ALL EXISTING SIGNS NOT SHOWN ON THE PLANS SHALL BE RETAINED.
- ALL UTILITY LOCATIONS SHOWN ARE APPROXIMATE AND SHOULD BE VERIFIED PRIOR TO ANY WORK COMMENCING.

PROJECT NAME: WILLISTON  
PROJECT NUMBER: STP FPAV(10)

FILE NAME: z17v027bdr.dgn  
PROJECT LEADER: G. EDWARDS  
DESIGNED BY: D. BARNES  
PLAN SHEET 17

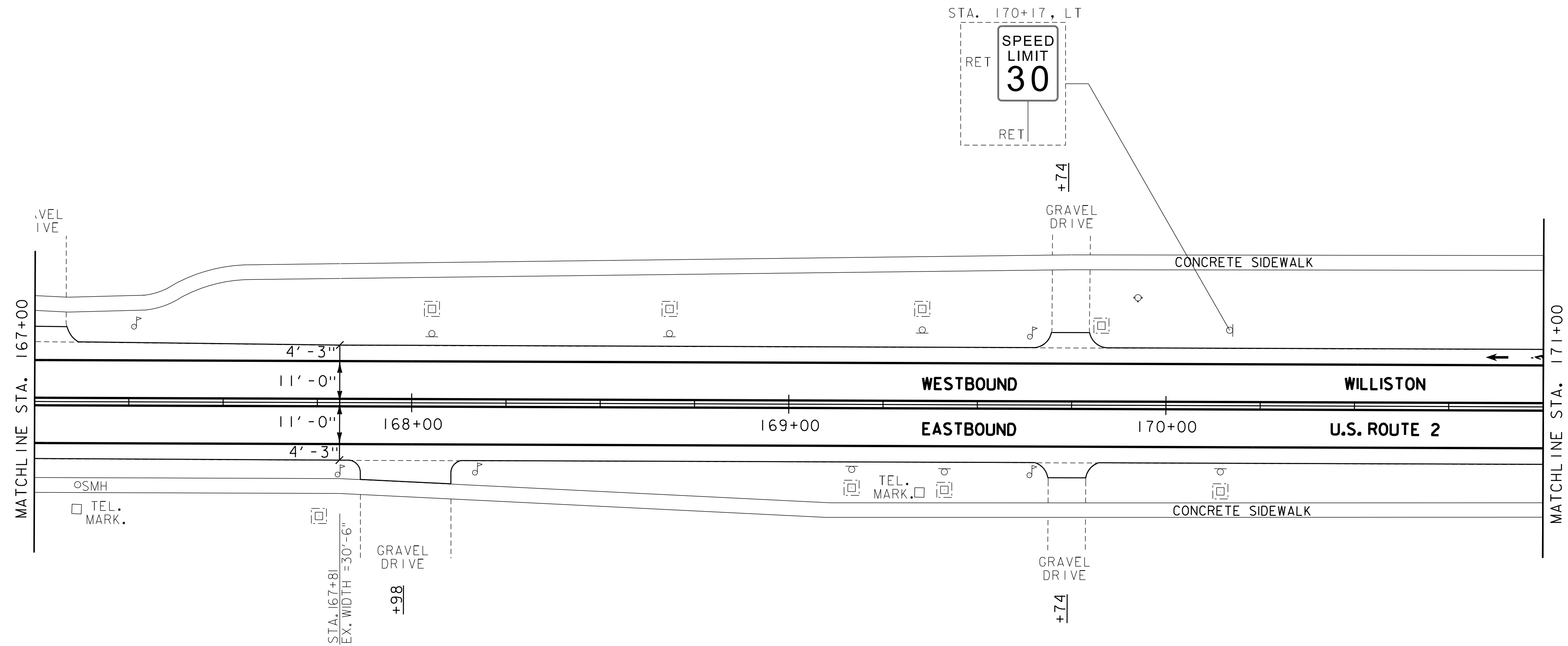
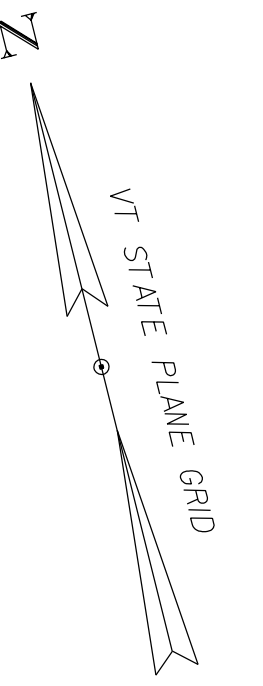
PLOT DATE: 11/20/2018  
DRAWN BY: D. BARNES  
CHECKED BY: J. LITTLE  
SHEET 36 OF 48



DURABLE 4 INCH WHITE LINE (OPTION ITEMS)  
 TEMPORARY 4 INCH WHITE LINE, PAINT  
 (ALL LINES WILL INCLUDE EDGE LINE BREAKS  
 AND RADII FOR SIDE ROADS)  
 STA. 167+00 TO 171+00, SOLID LT & RT

DURABLE 4 INCH YELLOW LINE (OPTION ITEMS)  
 TEMPORARY 4 INCH YELLOW LINE, PAINT  
 (ALL LINES WILL INCLUDE  $\phi$  BREAKS FOR SIDE ROADS)  
 STA. 167+00 TO 171+00, SOLID LT & RT

DURABLE LETTER OR SYMBOL (OPTION ITEMS)  
 TEMPORARY LETTER OR SYMBOL, PAINT  
 STA. 170+88, LT BIKE LANE ARROW



**NOTES:**

1. FOR LEGENDS, SEE SHEETS 3-4.
2. ALL EXISTING SIGNS NOT SHOWN ON THE PLANS SHALL BE RETAINED.
3. ALL UTILITY LOCATIONS SHOWN ARE APPROXIMATE AND SHOULD BE VERIFIED PRIOR TO ANY WORK COMMENCING.



PROJECT NAME: WILLISTON  
 PROJECT NUMBER: STP FPAV(10)  
 FILE NAME: z17v027bdr.dgn  
 PROJECT LEADER: G. EDWARDS  
 DESIGNED BY: D. BARNES  
 PLAN SHEET 18

PLOT DATE: 11/20/2018  
 DRAWN BY: D. BARNES  
 CHECKED BY: J. LITTLE  
 SHEET 37 OF 48

CHANGING ELEVATION OF SEWER MANHOLES  
STA. 171+59, LT

CHANGING ELEVATION OF SEWER MANHOLES  
(NO FEDERAL/STATE PARTICIPATION)  
STA. 171+55, RT

PORTLAND CEMENT  
CONCRETE SIDEWALK, 5 INCH  
STA. 171+34, RT  
STA. 171+70, RT

DETECTABLE WARNING SURFACE  
STA. 171+34, RT  
STA. 171+70, RT

ADJUST ELEVATION OF VALVE BOX  
(NO FEDERAL/STATE PARTICIPATION)  
STA. 171+68, LT  
STA. 171+72, LT

DURABLE 4 INCH WHITE LINE (OPTION ITEMS)  
TEMPORARY 4 INCH WHITE LINE, PAINT  
(ALL LINES WILL INCLUDE EDGE LINE BREAKS  
AND RADII FOR SIDE ROADS)  
STA. 171+00 TO 171+12, SOLID RT  
STA. 171+00 TO 171+24, SOLID LT  
STA. 171+12 TO 171+87, DOTTED RT (2)  
STA. 171+24 TO 172+06, DOTTED LT (2)  
STA. 171+49, SOLID RT (EDGE LINES, WHITNEY HILL RD.)  
STA. 171+87 TO 175+00, SOLID RT  
STA. 172+06 TO 175+00, SOLID LT

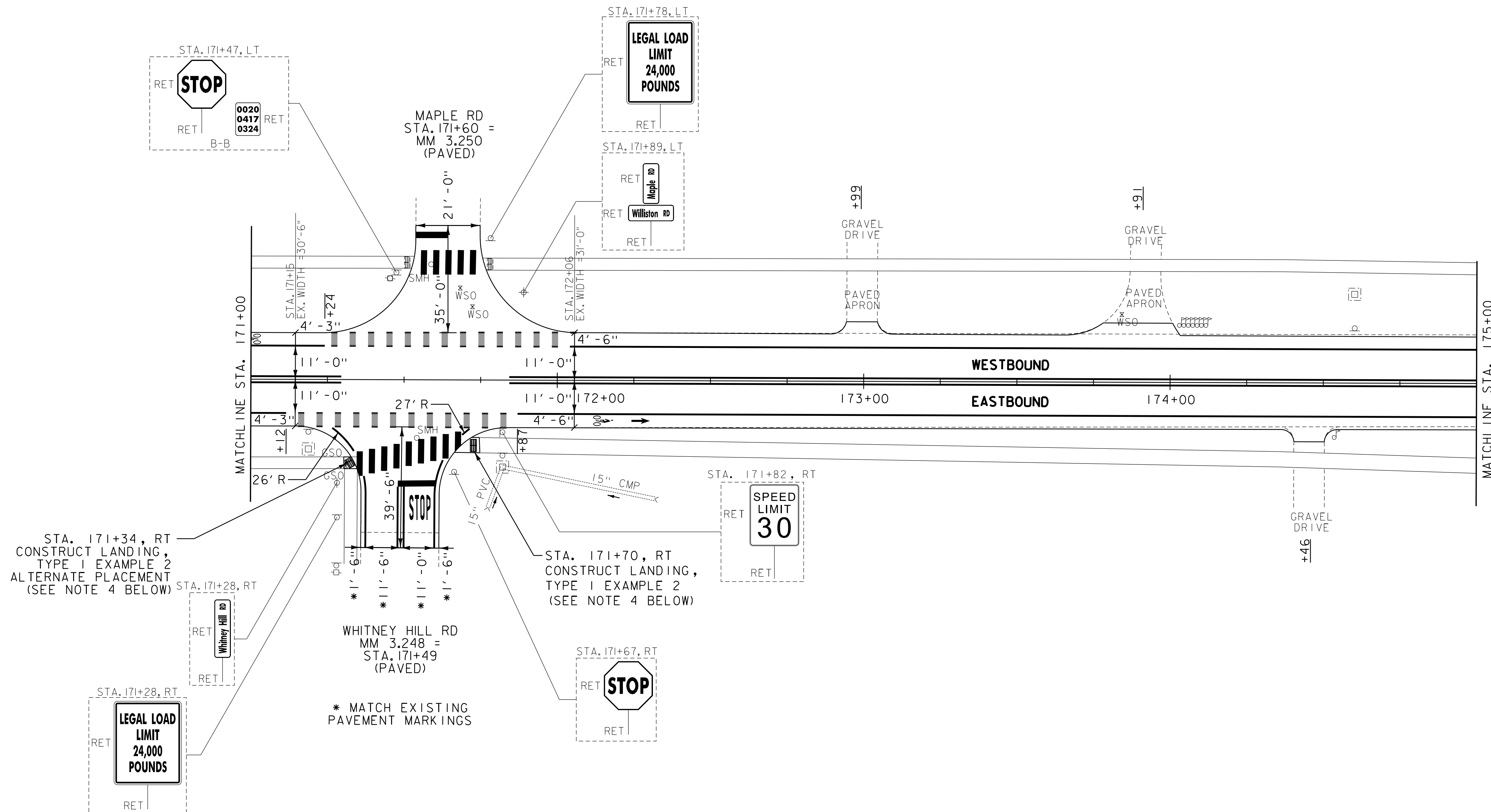
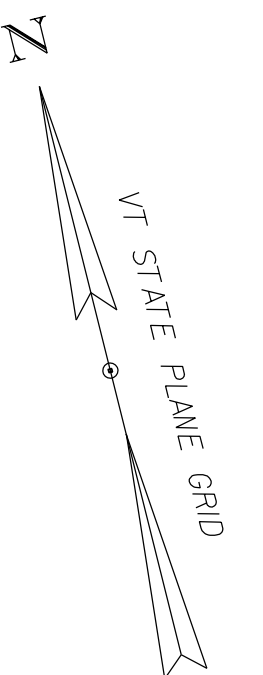
DURABLE 4 INCH YELLOW LINE (OPTION ITEMS)  
TEMPORARY 4 INCH YELLOW LINE, PAINT  
(ALL LINES WILL INCLUDE  $\phi$  BREAKS FOR SIDE ROADS)  
STA. 171+00 TO 175+00, SOLID LT & RT  
STA. 171+49, DOUBLE SOLID RT (WHITNEY HILL RD.)

DURABLE 24 INCH STOP BAR (OPTION ITEMS)  
TEMPORARY 24 INCH STOP BAR, PAINT  
STA. 171+49, RT (WHITNEY HILL RD.)  
STA. 171+60, LT (MAPLE RD.)

DURABLE LETTER OR SYMBOL (OPTION ITEMS)  
TEMPORARY LETTER OR SYMBOL, PAINT  
STA. 171+00, LT BIKE LANE SYMBOL  
STA. 171+49, RT "STOP" (WHITNEY HILL RD.)  
STA. 172+15, RT BIKE LANE SYMBOL  
STA. 172+27, RT BIKE LANE ARROW

DURABLE CROSSWALK MARKING (OPTION ITEMS)  
TEMPORARY CROSSWALK MARKING, PAINT  
STA. 171+49, RT (WHITNEY HILL RD.)  
STA. 171+60, LT (MAPLE RD.)

SPECIAL PROVISION (GREEN PAVEMENT  
MARKINGS - BICYCLE LANE)  
STA. 171+12 TO 171+87, BIKE LANE RT  
STA. 171+24 TO 172+06, BIKE LANE LT  
SEE SHEET 15



NOTES:

1. FOR LEGENDS, SEE SHEETS 3-4.
2. ALL EXISTING SIGNS NOT SHOWN ON THE PLANS SHALL BE RETAINED.
3. ALL UTILITY LOCATIONS SHOWN ARE APPROXIMATE AND SHOULD BE VERIFIED PRIOR TO ANY WORK COMMENCING.
4. THE SIDEWALK "LANDINGS" NOTED CONSIST OF THE REMOVAL AND REPLACEMENT OF A SINGLE SLAB OF CONCRETE SIDEWALK IN ORDER TO INSTALL A NEW DETECTABLE WARNING SURFACE. SEE NOTE 11 SHEET 5.



PROJECT NAME:	WILLISTON	FILE NAME:	z17v027bdr.dgn	PLOT DATE:	11/20/2018
PROJECT NUMBER:	STP FPAV(10)	PROJECT LEADER:	G. EDWARDS	DRAWN BY:	D. BARNES
		DESIGNED BY:	D. BARNES	CHECKED BY:	J. LITTLE
		PLAN SHEET 19		SHEET	38 OF 48



RELOCATE MAILBOX, SINGLE SUPPORT  
 STA. 177+01, RT  
 STA. 179+59, RT

DURABLE 4 INCH WHITE LINE (OPTION ITEMS)  
 TEMPORARY 4 INCH WHITE LINE, PAINT  
 (ALL LINES WILL INCLUDE EDGE LINE BREAKS  
 AND RADII FOR SIDE ROADS AND CROSSWALKS)  
 STA. 175+00 TO 176+28, SOLID LT  
 STA. 175+00 TO 181+00, SOLID RT  
 STA. 176+28 TO 177+73, DOTTED LT (2)  
 STA. 176+67, SOLID LT (EDGE LINES, CENTRAL SCHOOL DR.)  
 STA. 177+73 TO 181+00, SOLID LT

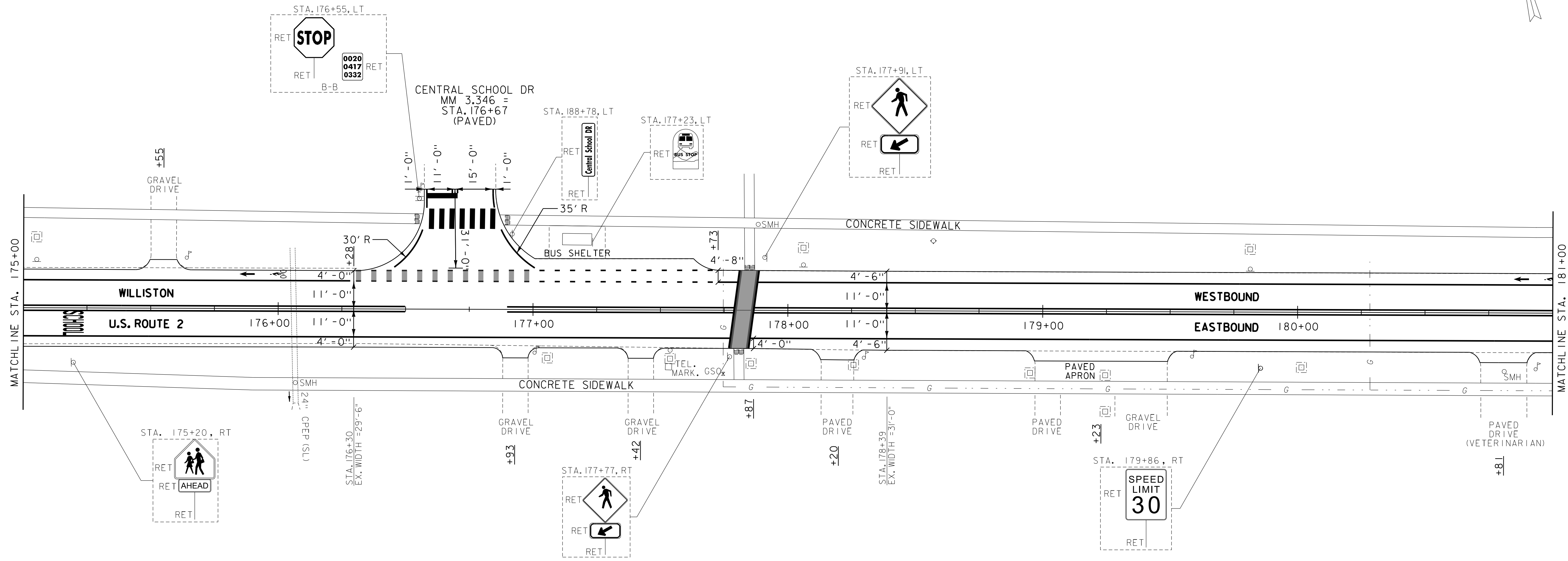
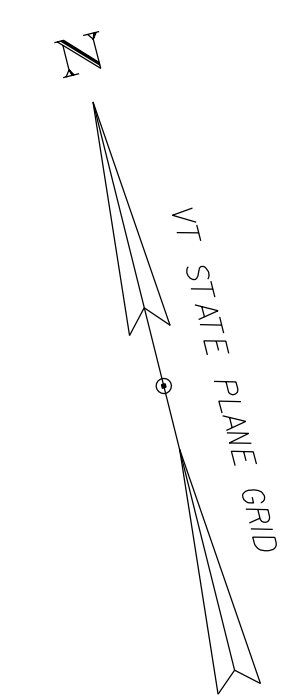
DURABLE 4 INCH YELLOW LINE (OPTION ITEMS)  
 TEMPORARY 4 INCH YELLOW LINE, PAINT  
 (ALL LINES WILL INCLUDE  $\phi$  BREAKS FOR SIDE ROADS  
 AND CROSSWALKS)  
 STA. 175+00 TO 181+00, SOLID LT & RT  
 STA. 176+67, DOUBLE SOLID LT (CENTRAL SCHOOL DR.)  
 DURABLE 24 INCH STOP BAR (OPTION ITEMS)  
 TEMPORARY 24 INCH STOP BAR, PAINT  
 STA. 176+67, LT (CENTRAL SCHOOL DR.)

DURABLE LETTER OR SYMBOL (OPTION ITEMS)  
 TEMPORARY LETTER OR SYMBOL  
 STA. 175+20, RT "SCHOOL"  
 STA. 175+88, LT BIKE LANE ARROW  
 STA. 176+00, LT BIKE LANE SYMBOL  
 STA. 180+88, LT BIKE LANE ARROW  
 STA. 181+00, LT BIKE LANE SYMBOL

DURABLE CROSSWALK MARKING (OPTION ITEMS)  
 STA. 176+67, LT (CENTRAL SCHOOL DR.)  
 TEMPORARY CROSSWALK MARKING, PAINT  
 STA. 176+67, LT (CENTRAL SCHOOL DR.)  
 STA. 177+81, RT TO 177+85, LT

SPECIAL PROVISION (GREEN PAVEMENT  
 MARKINGS - BICYCLE LANE)  
 STA. 176+28 TO 176+99, BIKE LANE LT  
 SEE SHEET 15

SPECIAL PROVISION (DURABLE CROSSWALK  
 MARKING, IMPRINTED/COLORIZED)  
 STA. 177+81, RT TO 177+85, LT



NOTES:

1. FOR LEGENDS, SEE SHEETS 3-4.
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PROJECT NAME: WILLISTON  
 PROJECT NUMBER: STP FPAV(10)

FILE NAME: z17v027bdr.dgn  
 PROJECT LEADER: G. EDWARDS  
 DESIGNED BY: D. BARNES  
 PLAN SHEET 20

PLOT DATE: 11/20/2018  
 DRAWN BY: D. BARNES  
 CHECKED BY: J. LITTLE  
 SHEET 39 OF 48





DURABLE 4 INCH WHITE LINE (OPTION ITEMS)  
 TEMPORARY 4 INCH WHITE LINE, PAINT  
 (ALL LINES WILL INCLUDE EDGE LINE BREAKS  
 AND RADII FOR SIDE ROADS AND CROSSWALKS)  
 STA. 181+00 TO 181+37, SOLID LT  
 STA. 181+00 TO 183+17, SOLID RT  
 STA. 181+47 TO 181+93, DOTTED LT (2)  
 STA. 183+17 TO 183+83, DOTTED RT (2)  
 STA. 181+93 TO 186+00, SOLID LT  
 STA. 183+83 TO 186+00, SOLID RT

DURABLE 4 INCH YELLOW LINE (OPTION ITEMS)  
 TEMPORARY 4 INCH YELLOW LINE, PAINT  
 (ALL LINES WILL INCLUDE  $\frac{1}{2}$  BREAKS FOR SIDE  
 ROADS AND CROSSWALKS)  
 STA. 181+00 TO 186+00, SOLID LT & RT

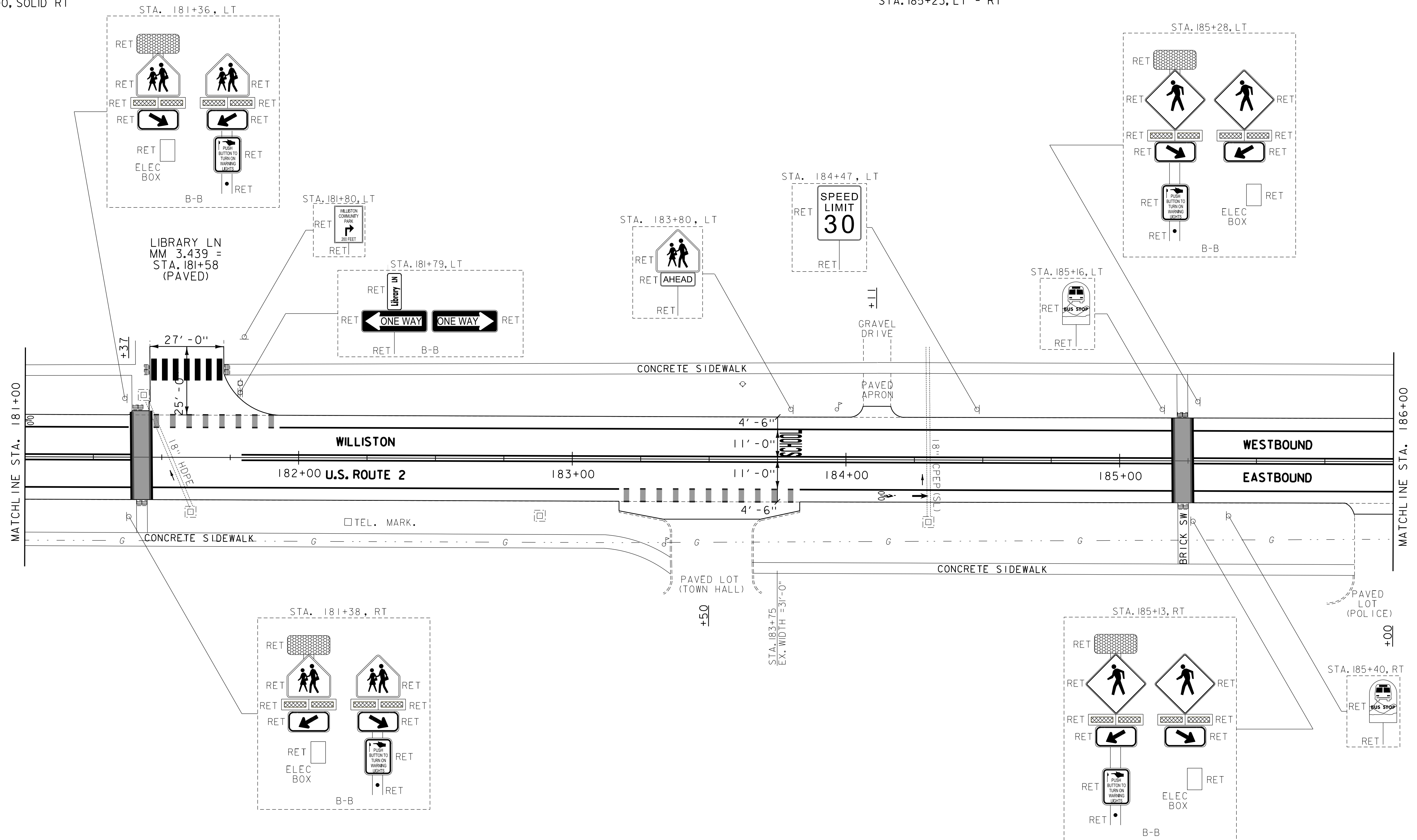
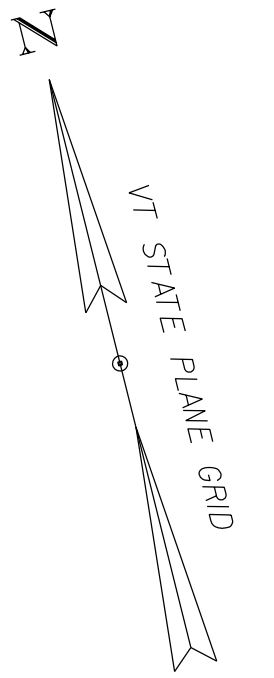
DURABLE LETTER OR SYMBOL (OPTION ITEMS)  
 TEMPORARY LETTER OR SYMBOL, PAINT  
 STA. 183+80, LT "SCHOOL"  
 STA. 184+15, RT BIKE LANE SYMBOL  
 STA. 184+27, RT BIKE LANE ARROW

DURABLE CROSSWALK MARKING (OPTION ITEMS)  
 STA. 181+58, LT (LIBRARY LN.)

TEMPORARY CROSSWALK MARKING, PAINT  
 STA. 181+43, LT - RT  
 STA. 181+58, LT (LIBRARY LN.)  
 STA. 185+23, LT - RT

SPECIAL PROVISION (DURABLE CROSSWALK  
 MARKING, IMPRINTED/COLORIZED)  
 STA. 181+43, LT - RT  
 STA. 185+23, LT - RT

SPECIAL PROVISION (GREEN PAVEMENT  
 MARKINGS - BICYCLE LANE)  
 STA. 181+47 TO 181+93, BIKE LANE LT  
 STA. 183+17 TO 183+83, BIKE LANE RT  
 SEE SHEET 15



NOTES:

- FOR LEGENDS, SEE SHEETS 3-4.
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PROJECT NAME: WILLISTON  
 PROJECT NUMBER: STP FPAV(10)  
 FILE NAME: z17v027bdr.dgn  
 PROJECT LEADER: G. EDWARDS  
 DESIGNED BY: D. BARNES  
 PLAN SHEET 21

PLOT DATE: 11/20/2018  
 DRAWN BY: D. BARNES  
 CHECKED BY: J. LITTLE  
 SHEET 40 OF 48

CHANGING ELEVATION OF DIs, CBs OR MHs  
 STA. 188+42, LT

ADJUST ELEVATION OF VALVE BOX  
 (NO FEDERAL/STATE PARTICIPATION)  
 STA. 188+66, LT

DURABLE 4 INCH WHITE LINE (OPTION ITEMS)  
 TEMPORARY 4 INCH WHITE LINE, PAINT  
 (ALL LINES WILL INCLUDE EDGE LINE BREAKS  
 AND RADII FOR SIDE ROADS)  
 STA. 186+00 TO 188+03, SOLID LT  
 STA. 186+00 TO 191+00, SOLID RT  
 STA. 188+03 TO 188+91, DOTTED LT (2)  
 STA. 188+91 TO 191+00, SOLID LT  
 STA. 190+85 TO 191+00, SOLID RT

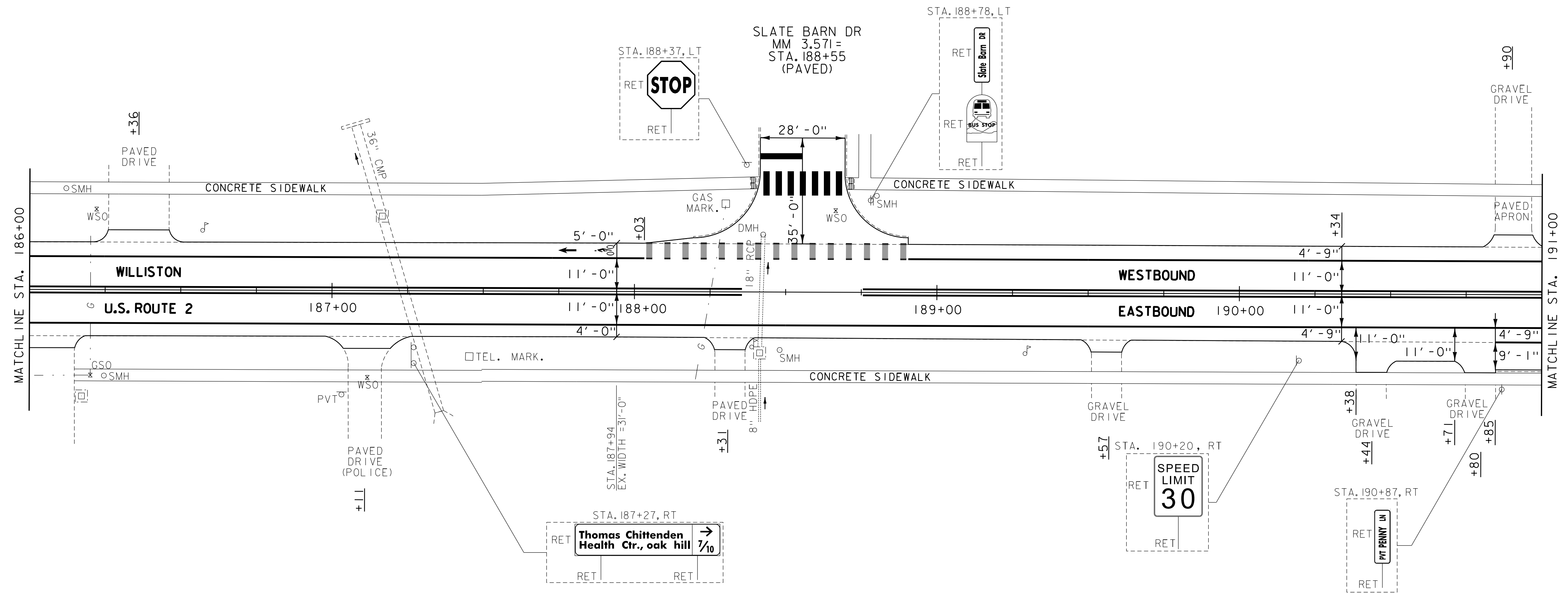
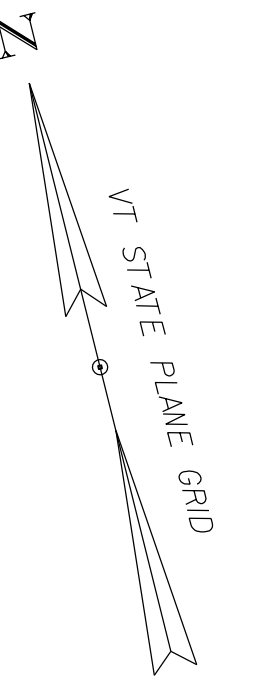
DURABLE 4 INCH YELLOW LINE (OPTION ITEMS)  
 TEMPORARY 4 INCH YELLOW LINE, PAINT  
 (ALL LINES WILL INCLUDE  $\frac{1}{2}$  BREAKS FOR SIDE ROADS)  
 STA. 186+00 TO 191+00, SOLID LT & RT

DURABLE 24 INCH STOP BAR (OPTION ITEMS)  
 TEMPORARY 24 INCH STOP BAR, PAINT  
 STA. 188+55, LT (SLATE BARN DR.)

DURABLE LETTER OR SYMBOL (OPTION ITEMS)  
 TEMPORARY LETTER OR SYMBOL, PAINT  
 STA. 187+78, LT BIKE LANE ARROW  
 STA. 187+90, LT BIKE LANE SYMBOL

DURABLE CROSSWALK MARKING (OPTION ITEMS)  
 TEMPORARY CROSSWALK MARKING, PAINT  
 STA. 188+55, LT (SLATE BARN DR.)

SPECIAL PROVISION (GREEN PAVEMENT  
 MARKINGS - BICYCLE LANE)  
 STA. 188+03 TO 188+91, BIKE LANE LT  
 SEE SHEET 15



NOTES:

1. FOR LEGENDS, SEE SHEETS 3-4.
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3. ALL UTILITY LOCATIONS SHOWN ARE APPROXIMATE AND SHOULD BE VERIFIED PRIOR TO ANY WORK COMMENCING.



PROJECT NAME: WILLISTON  
 PROJECT NUMBER: STP FPAV(10)

FILE NAME: z17v027bdr.dgn  
 PROJECT LEADER: G. EDWARDS  
 DESIGNED BY: D. BARNES  
 PLAN SHEET 22

PLOT DATE: 11/20/2018  
 DRAWN BY: D. BARNES  
 CHECKED BY: J. LITTLE  
 SHEET 41 OF 48

STONE FILL, TYPE J  
STA. 194+53 TO 194+60, RT

RELOCATE MAILBOX, SINGLE SUPPORT  
STA. 192+46, LT

STEEL BEAM GUARDRAIL, GALVANIZED  
STA. 194+07.5 TO 194+82.5, RT

ANCHOR FOR STEEL BEAM RAIL  
STA. 194+07.5, RT  
STA. 194+82.5, RT

REMOVAL AND DISPOSAL OF GUARDRAIL  
STA. 194+07.5 TO 194+82.5, RT

DURABLE 4 INCH WHITE LINE (OPTION ITEMS)  
TEMPORARY 4 INCH WHITE LINE, PAINT  
(ALL LINES WILL INCLUDE EDGE LINE BREAKS  
AND RADII FOR SIDE ROADS AND CROSSWALKS)  
STA. 191+00 TO 191+99, SOLID RT  
STA. 191+00 TO 196+00, SOLID LT & RT

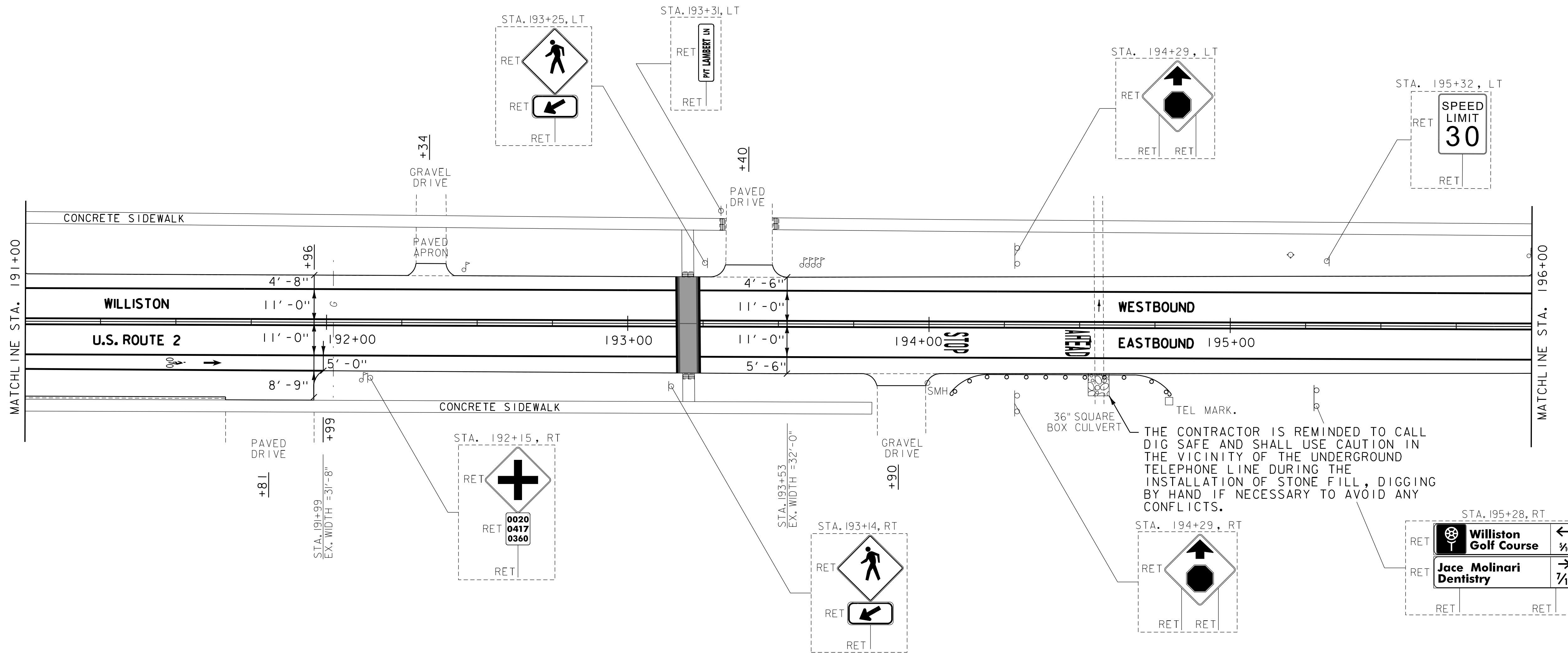
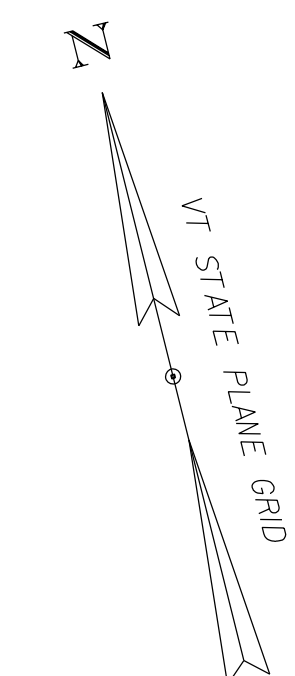
DURABLE 4 INCH YELLOW LINE (OPTION ITEMS)  
TEMPORARY 4 INCH YELLOW LINE, PAINT  
(ALL LINES WILL INCLUDE  $\phi$  BREAKS FOR  
SIDE ROADS AND CROSSWALKS)  
STA. 191+00 TO 196+00, SOLID LT & RT

DURABLE LETTER OR SYMBOL (OPTION ITEMS)  
TEMPORARY LETTER OR SYMBOL, PAINT  
STA. 191+50, RT BIKE LANE SYMBOL  
STA. 191+62, RT BIKE LANE ARROW  
STA. 194+09, RT "STOP"  
STA. 194+50, RT "AHEAD"

TEMPORARY CROSSWALK MARKING, PAINT  
STA. 193+20, LT - RT

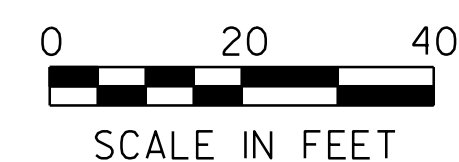
GRUBBING MATERIAL (6")  
STA. 194+53 TO 194+60, RT

SPECIAL PROVISION (DURABLE CROSSWALK  
MARKING, IMPRINTED/COLORIZED)  
STA. 193+20, LT - RT



NOTES:

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PROJECT NAME: WILLISTON  
PROJECT NUMBER: STP FPAV(10)

FILE NAME: z17v027bdr.dgn  
PROJECT LEADER: G. EDWARDS  
DESIGNED BY: D. BARNES  
PLAN SHEET 23

PLOT DATE: 11/20/2018  
DRAWN BY: D. BARNES  
CHECKED BY: J. LITTLE  
SHEET 42 OF 48

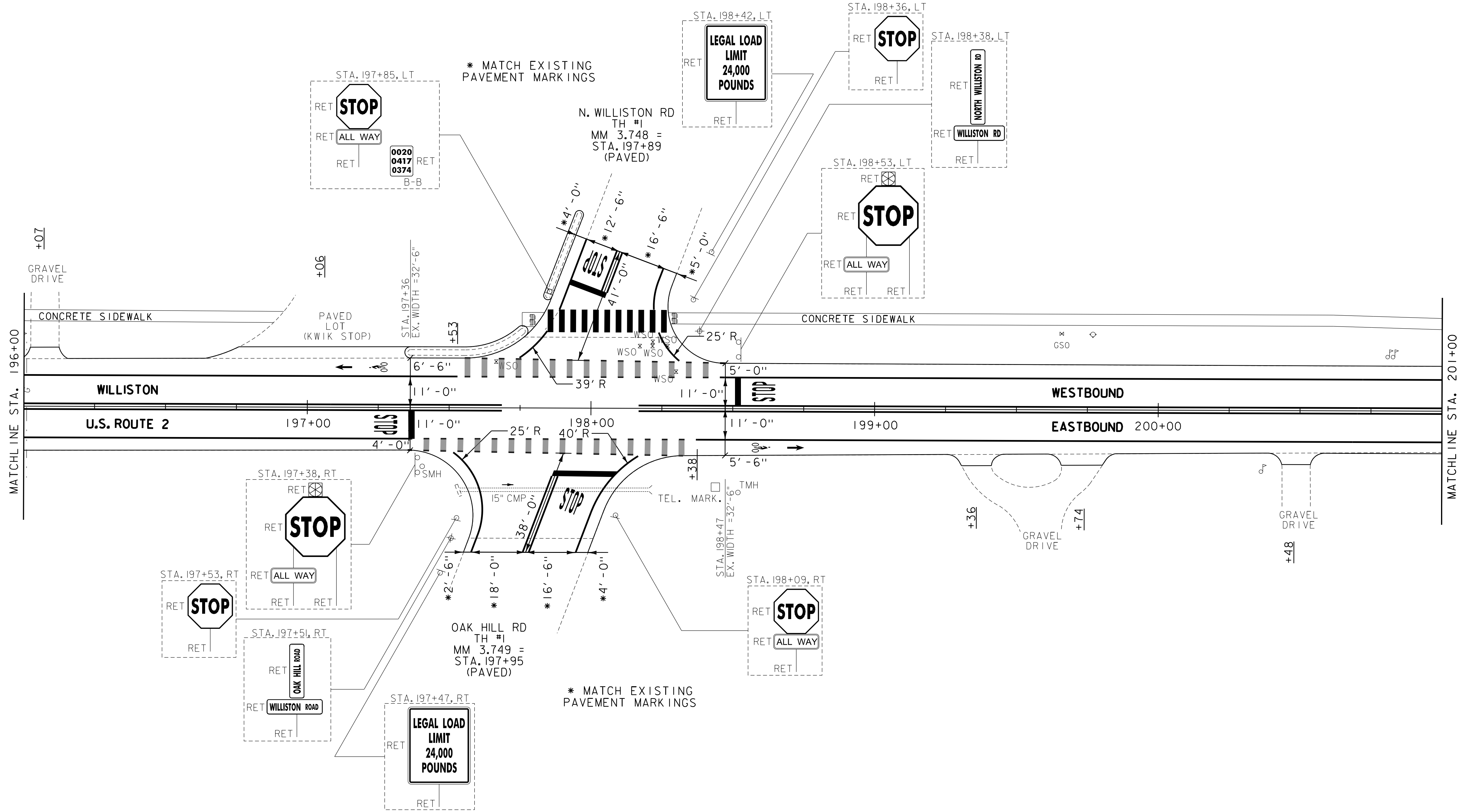
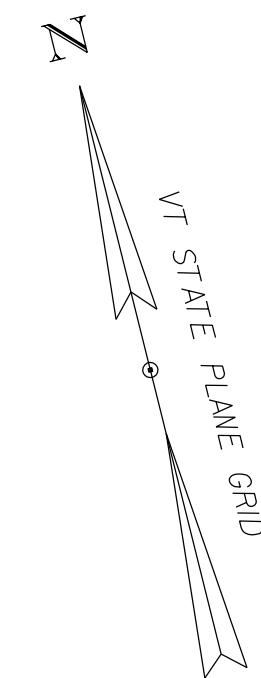
ADJUST ELEVATION OF VALVE BOX  
(NO FEDERAL/STATE PARTICIPATION)  
STA. 197+66, LT  
STA. 198+17, LT  
STA. 198+22, LT  
STA. 198+22, LT  
STA. 198+27, LT  
STA. 198+30, LT

DURABLE 4 INCH WHITE LINE (OPTION ITEMS)  
TEMPORARY 4 INCH WHITE LINE, PAINT  
(ALL LINES WILL INCLUDE EDGE LINE BREAKS  
AND RADII FOR SIDE ROADS)  
STA. 196+00 TO 197+36, SOLID RT  
STA. 196+00 TO 197+53, SOLID LT  
STA. 197+36 TO 198+38, DOTTED RT (2)  
STA. 197+53 TO 198+47, DOTTED LT (2)  
STA. 197+89, SOLID LT (EDGE LINES, N. WILLISTON RD. TH-I)  
STA. 197+95, SOLID RT (EDGE LINES, OAK HILL RD. TH-I)  
STA. 198+38 TO 201+00, SOLID RT  
STA. 198+47 TO 201+00, SOLID LT

DURABLE 4 INCH YELLOW LINE (OPTION ITEMS)  
TEMPORARY 4 INCH YELLOW LINE, PAINT  
(ALL LINES WILL INCLUDE  $\phi$  BREAKS FOR SIDE ROADS)  
STA. 196+00 TO 201+00, SOLID LT & RT  
STA. 197+89, DOUBLE SOLID LT (N. WILLISTON RD. TH-I)  
STA. 197+95, DOUBLE SOLID RT (OAK HILL RD. TH-I)  
  
DURABLE 24 INCH STOP BAR (OPTION ITEMS)  
TEMPORARY 24 INCH STOP BAR, PAINT  
STA. 197+37, RT  
STA. 197+89, LT (N. WILLISTON RD. TH-I)  
STA. 197+95, RT (OAK HILL RD. TH-I)  
STA. 198+52, LT

DURABLE LETTER OR SYMBOL (OPTION ITEMS)  
TEMPORARY LETTER OR SYMBOL, PAINT  
STA. 197+13, LT BIKE LANE ARROW  
STA. 197+25, LT BIKE LANE SYMBOL  
STA. 197+28, RT "STOP"  
STA. 197+89, LT "STOP" (N. WILLISTON RD. TH-I)  
STA. 197+95, RT "STOP" (OAK HILL RD. TH-I)  
STA. 198+60, RT BIKE LANE SYMBOL  
STA. 198+61, LT "STOP"  
STA. 198+72, RT BIKE LANE ARROW

SPECIAL PROVISION (GREEN PAVEMENT  
MARKINGS - BICYCLE LANE)  
STA. 197+36 TO 198+38, BIKE LANE RT  
STA. 197+53 TO 198+47, BIKE LANE LT  
SEE SHEET 15



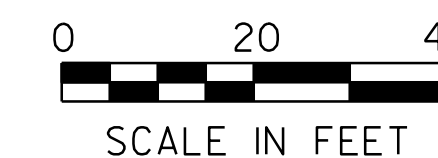
NOTES:

1. FOR LEGENDS, SEE SHEETS 3-4.
2. ALL EXISTING SIGNS NOT SHOWN ON THE PLANS SHALL BE RETAINED.
3. ALL UTILITY LOCATIONS SHOWN ARE APPROXIMATE AND SHOULD BE VERIFIED PRIOR TO ANY WORK COMMENCING.

PROJECT NAME: WILLISTON  
PROJECT NUMBER: STP FPAV(10)

FILE NAME: z17v027bdr.dgn  
PROJECT LEADER: G. EDWARDS  
DESIGNED BY: D. BARNES  
PLAN SHEET 24

PLOT DATE: 11/20/2018  
DRAWN BY: D. BARNES  
CHECKED BY: J. LITTLE  
SHEET 43 OF 48

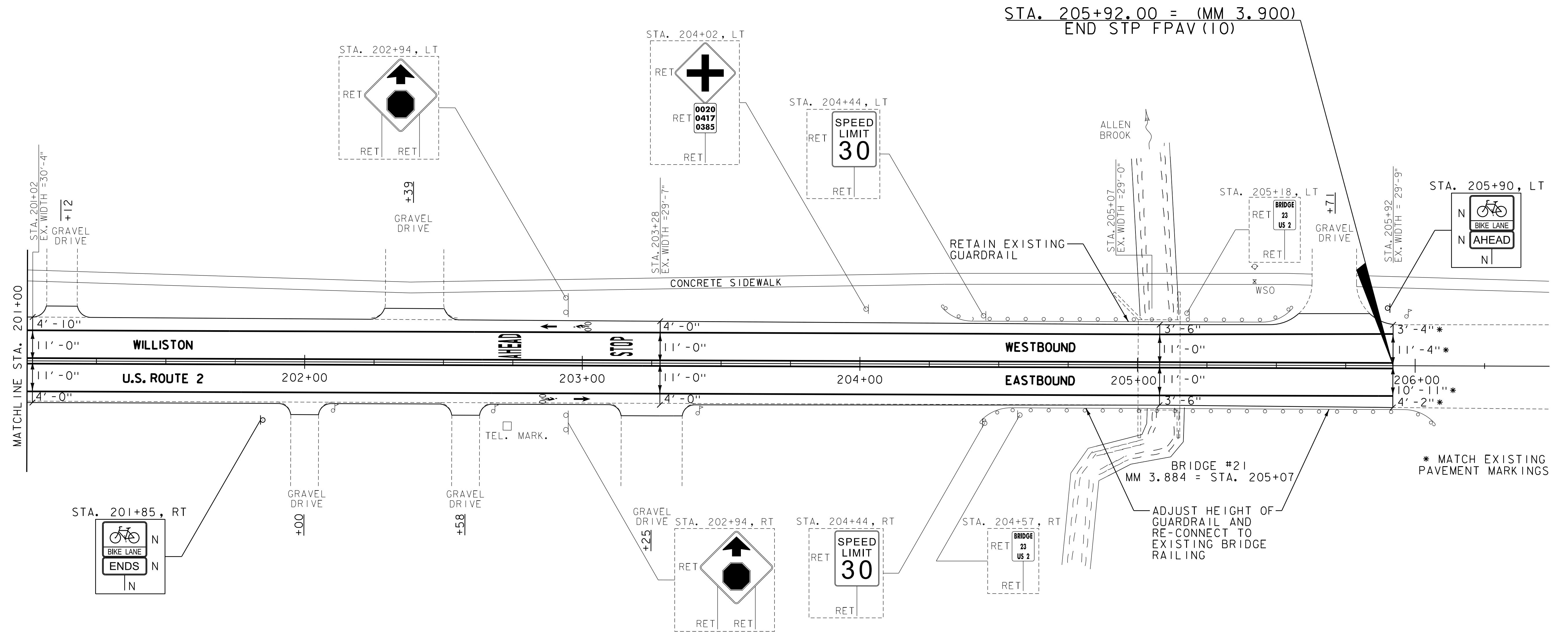
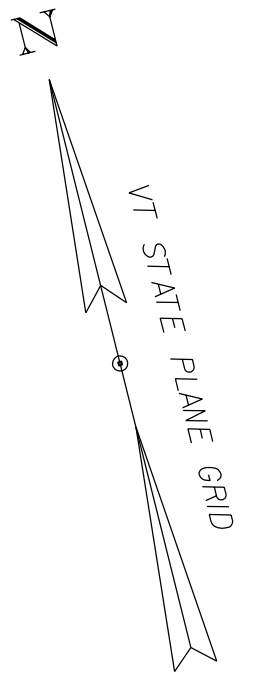


ADJUST HEIGHT OF GUARDRAIL  
 STA. 204+44 TO 204+81.5, RT  
 STA. 205+69 TO 206+06.5, RT

DURABLE 4 INCH WHITE LINE (OPTION ITEMS)  
 TEMPORARY 4 INCH WHITE LINE, PAINT  
 (ALL LINES WILL INCLUDE EDGE LINE BREAKS  
 AND RADII FOR SIDE ROADS)  
 STA. 201+00 TO 205+92.00, SOLID LT & RT

DURABLE 4 INCH YELLOW LINE (OPTION ITEMS)  
 TEMPORARY 4 INCH YELLOW LINE, PAINT  
 (ALL LINES WILL INCLUDE  $\text{C}$  BREAKS FOR SIDE ROADS)  
 STA. 201+00 TO 205+92.00, SOLID LT & RT

DURABLE LETTER OR SYMBOL (OPTION ITEMS)  
 TEMPORARY LETTER OR SYMBOL, PAINT  
 STA. 202+74, LT "AHEAD"  
 STA. 202+88, LT BIKE LANE ARROW  
 STA. 202+88, RT BIKE LANE SYMBOL  
 STA. 203+00, LT BIKE LANE SYMBOL  
 STA. 203+00, RT BIKE LANE ARROW  
 STA. 203+14, LT "STOP"



NOTES:

1. FOR LEGENDS, SEE SHEETS 3-4.
2. ALL EXISTING SIGNS NOT SHOWN ON THE PLANS SHALL BE RETAINED.
3. ALL UTILITY LOCATIONS SHOWN ARE APPROXIMATE AND SHOULD BE VERIFIED PRIOR TO ANY WORK COMMENCING.



PROJECT NAME: WILLISTON  
 PROJECT NUMBER: STP FPAV(10)

FILE NAME: z17v027bdr.dgn  
 PROJECT LEADER: G. EDWARDS  
 DESIGNED BY: D. BARNES  
 PLAN SHEET 25

PLOT DATE: 11/20/2018  
 DRAWN BY: D. BARNES  
 CHECKED BY: J. LITTLE  
 SHEET 44 OF 48

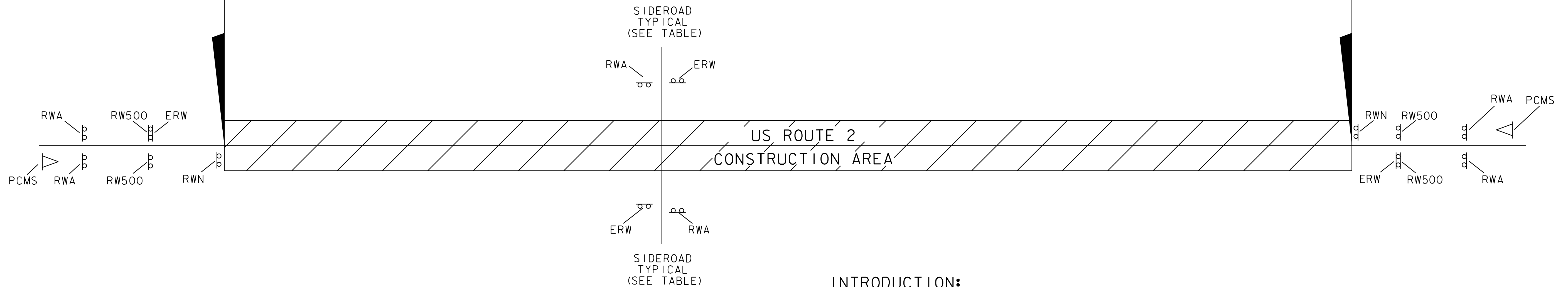






WILLISTON STA. 82+31.52 = (1.559)  
BEGIN STP FPAV (10)

WILLISTON STA. 205+92.00 = (3.900)  
END STP FPAV (10)



SEE VTRANS STANDARD T-10 FOR SIGN PLACEMENT.

LOCATION	ERW	RW500	RWA	RWN	▶
<b>WILLISTON US ROUTE 2</b>					
US ROUTE 2 (BEGIN PROJECT)	1	2	2	1	1
BOXWOOD STREET	1		1		
MAPLE TREE PLACE	1		1		
ZEPHYR ROAD	1		1		
TALCOTT ROAD	1		1		
TALCOTT ROAD	1		1		
SOUTHRIDGE ROAD	1		1		
OLD STAGE ROAD	1		1		
TOWER LANE	1		1		
WHITNEY HILL ROAD	1		1		
MAPLE ROAD	1		1		
CENTRAL SCHOOL DRIVE	1		1		
LIBRARY LANE	1				
SLATE BARN DRIVE	1		1		
OAK HILL ROAD	1		1		1
NORTH WILLISTON ROAD	1		1		1
US ROUTE 2 (END PROJECT)	1	2	2	1	1
<b>TOTALS</b>	17	4	18	2	4

**LEGEND**

- ERW = END ROAD WORK
- RW500 = ROAD WORK 500 FT
- RWA = ROAD WORK AHEAD
- RWN = ROAD WORK NEXT
- ▶ = PORTABLE CHANGEABLE MESSAGE SIGN

**INTRODUCTION:**

- UNLESS OTHERWISE NOTED, THE OBJECTIVE OF THIS PLAN IS TO MINIMIZE IMPACT ON THE TRAFFIC FLOW WHILE PROVIDING A SAFE PASSAGE FOR VEHICLES AND PEDESTRIANS DURING AND AFTER CONSTRUCTION WORK HOURS.
- THE FOLLOWING TRAFFIC CONTROL INFORMATION IS INTENDED TO BE A GENERAL OUTLINE FOR HOW THE WORK SHOULD PROCEED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE SITE SPECIFIC DETAILS TO ADDRESS SPECIFIC SITUATIONS. THIS RESPONSIBILITY INCLUDES PROVIDING A PLAN DETAILING THE USE AND PLACEMENT OF SIGNS, CHANNELING DEVICES, ARROW PANELS, FLAGGERS AND UNIFORMED TRAFFIC OFFICERS (UTO'S) DURING LANE CLOSURES. IF THE CONTRACTOR DOES NOT WISH TO FOLLOW THIS OUTLINE, THE CONTRACTOR SHALL SUBMIT AN ALTERNATE PROPOSAL TO THE PAVEMENT DESIGN UNIT VIA THE ENGINEER. THE CONTRACTOR MUST ALLOW AT LEAST FOUR WEEKS FOR REVIEW AND APPROVAL OF THE COMPREHENSIVE PLAN AND TWO WEEKS FOR REVIEW AND APPROVAL OF MINOR CHANGES/DETAILS. ALL TRAFFIC CONTROL DETAILS MUST BE DESIGNED AND IMPLEMENTED IN ACCORDANCE WITH THE MUTCD AND VTRANS STANDARDS T-1, T-10, T-17, T-24, T-28, T-29, T-30, T-31, T-35 AND T-36. WHERE CONFLICTS EXIST, THE MUTCD SHALL GOVERN.

**NIGHTTIME LIGHTING PLAN:**

- THE CONTRACTOR SHALL SUBMIT A NIGHTTIME OPERATIONS AND LIGHTING PLAN TO THE ENGINEER, AT A SCALE AND PRINTED SIZE SIMILAR TO THE CONTRACT PLANS AND APPROPRIATE TO ADEQUATELY DESCRIBE THE WORK, INCLUDING THE FOLLOWING:
  - LAYOUT SHOWING LOCATION OF LIGHT TOWERS, INCLUDING TYPICAL SPACING, LATERAL PLACEMENT AND MOUNTING HEIGHT, AND CLEARLY SHOW THE LOCATION OF ALL LIGHTS NECESSARY FOR ALL WORK TO BE DONE AT NIGHT.
  - DESCRIPTION OF LIGHT TOWERS TO BE USED AND ELECTRICAL POWER SOURCE.
  - SPECIFIC TECHNICAL DETAILS ON ALL LIGHTING EQUIPMENT, INCLUDING BRAND NAMES, MODEL NUMBERS, POWER RATING AND PHOTOMETRIC DATA.
  - DETAILS OF ANY HOODS, LOUVERS, SHIELDS OR OTHER MEANS TO BE USED TO CONTROL GLARE.
  - ATTACHMENT AND MOUNTING DETAILS FOR LIGHTS TO BE ATTACHED TO EQUIPMENT.
  - LIGHTING CALCULATIONS CONFIRMING THAT THE ILLUMINATION REQUIREMENTS WILL BE MET BY THE LAYOUT.
- THE PLAN SHOULD CONSIDER HOW THOSE LIGHT SOURCES ARE GOING TO BE POWERED (SITE POWER FROM THE GRID OR FROM GENERATORS). IF THEY ARE LIGHT TOWERS, IS THERE A CLEAR PATH TO REACH THEM FOR REFUELING? CONSIDERATIONS SHOULD ALSO BE FACTORED IN FOR OVERLAPPING THE BEAMS FROM DIFFERENT LIGHT SOURCES TO ELIMINATE SHADOWING FROM THE WORKERS THEMSELVES.

**TRAFFIC CONTROL NOTES**

- THE CONTRACTOR SHALL SUBMIT A SITE SPECIFIC TRAFFIC CONTROL PLAN TO THE ENGINEER PER SECTION 105.03 OF THE STANDARD SPECIFICATIONS PRIOR TO THE START OF CONSTRUCTION. FIELD OPERATIONS SHALL NOT BEGIN UNTIL THE TCP HAS BEEN ACCEPTED. THE CONTRACTOR SHALL INCLUDE A CONSTRUCTION SIGN PACKAGE FOR EXPECTED LANE CLOSURES, WORK ZONE SPEED REDUCTIONS AND BICYCLE 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) SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 641.0, TRAFFIC CONTROL.
- NIGHT WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM (NCHRP) REPORT 476 - "GUIDELINES FOR DESIGN AND OPERATION OF NIGHTTIME TRAFFIC CONTROL FOR HIGHWAY MAINTENANCE AND CONSTRUCTION". CONTRACTOR SHALL SUBMIT A SITE SPECIFIC LIGHTING PLAN FOR APPROVAL. ALL COSTS ASSOCIATED WITH THE DESIGN AND IMPLEMENTATION OF THE LIGHTING SYSTEM WILL BE CONSIDERED INCIDENTAL TO CONTRACT ITEM 641.0 TRAFFIC CONTROL.
- ALL TEMPORARY TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THESE PROJECT PLANS, APPLICABLE VTRANS E-SERIES AND T-SERIES STANDARD DRAWINGS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), DATED 2009, AND ITS LATEST REVISIONS, OR AS DIRECTED BY THE ENGINEER.

(CONTINUED ON NEXT SHEET)

NOT TO SCALE

PROJECT NAME: WILLISTON  
PROJECT NUMBER: STP FPAV(10)

FILE NAME: z17v027detail.dgn PLOT DATE: 11/20/2018  
PROJECT LEADER: G. EDWARDS DRAWN BY: G. MERKLE  
DESIGNED BY: G. MERKLE CHECKED BY: J. LITTLE  
CONSTRUCTION APPROACH SIGNING SHEET 1 SHEET 46 OF 48



TRAFFIC CONTROL NOTES (CONTINUED)

4. TWO-WAY TRAFFIC SHALL BE MAINTAINED DURING NON-WORK HOURS. REFER TO SPECIAL PROVISIONS FOR STANDARD WORK PERIOD DEFINITION. LANE CLOSURES RESULTING IN ONE-WAY ALTERNATING TRAFFIC ONLY PERMITTED DURING THE STANDARD ONLY WORK PERIOD.
5. THE CONTRACTOR SHALL SUBMIT A SITE SPECIFIC TRAFFIC CONTROL PLAN TO THE ENGINEER PER SECTION 105.03 OF THE STANDARD SPECIFICATIONS PRIOR TO THE START OF CONSTRUCTION. FIELD OPERATIONS SHALL NOT BEGIN UNTIL THE TCP HAS BEEN ACCEPTED. THE CONTRACTOR SHALL INCLUDE A CONSTRUCTION SIGN PACKAGE FOR EXPECTED LANE CLOSURES, WORK ZONE SPEED REDUCTIONS AND BICYCLE 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) SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 641.10, TRAFFIC CONTROL.
6. ALL TEMPORARY TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THESE PROJECT PLANS, APPLICABLE VTRANS E-SERIES AND T-SERIES STANDARD DRAWINGS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), DATED 2009, AND ITS LATEST REVISIONS, OR AS DIRECTED BY THE ENGINEER.
7. TWO-WAY TRAFFIC SHALL BE MAINTAINED DURING NON-WORK HOURS. REFER TO SPECIAL PROVISIONS FOR STANDARD WORK PERIOD DEFINITION. LANE CLOSURES RESULTING IN ONE-WAY ALTERNATING TRAFFIC ONLY PERMITTED DURING THE STANDARD ONLY WORK PERIOD.
8. SIGNS SHALL ONLY BE VISIBLE TO MOTORIST AT THE TIMES WHEN THE MESSAGE IS PERTINENT, I.E. A "FLAGGER AHEAD" SIGN SHALL ONLY BE VISIBLE TO MOTORIST WHEN THE FLAGGER IS ACTUALLY PRESENT PERFORMING THEIR DUTIES.
9. DURING CONSTRUCTION, A MINIMUM PAVED LANE WIDTH OF 12 FEET SHALL BE MAINTAINED. DMV WILL REQUIRE NOTIFICATION FOR WIDTH RESTRICTION TO REROUTE SUPER LOAD PERMITS.
10. SIGNALIZED INTERSECTIONS MUST BE CONTROLLED BY UNIFORMED TRAFFIC OFFICERS WHEN LANES ARE NOT IN NORMAL OPERATION EXCEPT DURING NIGHT TIME FLASHING OPERATION.
11. WHEN COLD PLANED BITUMINOUS PAVEMENT IS OPEN TO TRAFFIC, A "MOTORCYCLES USE CAUTION" SIGN, AS PER VTRANS STANDARDS T-17 AND T-30, SHALL BE PROVIDED.
12. THE CONTRACTOR SHOULD LEAVE NO LONGITUDINAL DROP-OFFS DURING NON-WORK HOURS. THEREFORE, THE FULL ROADWAY WIDTH SHOULD BE COLD PLANED OR PAVED OR RESTORED WITH GRAVEL TO A CONDITION WHERE NO LONGITUDINAL DROP OFF EXISTS TO ALLOW ACCESS TO DRIVEWAYS DURING NON-WORK HOURS. WHEN NECESSARY, DROP-OFF PROTECTION IN THESE AREAS SHALL CONFORM TO VTRANS STANDARDS T-35 AND T-36.
13. MAINTAIN ACCESS TO ALL PROPERTIES AT ALL TIMES FOR EMERGENCY VEHICLES. MAINTAIN ACCESS TO ALL COMMERCIAL AND MUNICIPAL PROPERTIES DURING BUSINESS HOURS. ACCESS TO RESIDENTIAL PROPERTIES 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.
14. ALL NON-OPERATING SIGNAL HEADS SHALL BE REMOVED OR COMPLETELY COVERED AS DIRECTED BY THE ENGINEER.
15. ALL PERMANENT SIGNS WHICH CONFLICT WITH TEMPORARY TRAFFIC CONTROL MUST BE COMPLETELY COVERED.
16. 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.
17. 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 SHALL BE PAID UNDER ITEM 641.15, PORTABLE CHANGEABLE MESSAGE SIGN.
18. 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 VTRANS STANDARDS. ALL ADJUSTING, RELOCATING AND REMOVING OF THESE DEVICES AS DIRECTED BY THE ENGINEER SHALL ALSO BE INCLUDED. THE FOLLOWING ITEMS WILL BE PAID FOR SEPARATELY: 646.602, 646.612, 646.642, 646.652, 646.682, 646.692, 646.702 - PAVEMENT MARKINGS, 630.10 UNIFORMED TRAFFIC OFFICER AND 630.15 FLAGGERS.
19. THE LATEST EDITION OF THE MUTCD AND ITS REVISIONS 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 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.
20. 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.
21. SEE VTRANS STANDARDS T-10 AND T-17 FOR ADDITIONAL SIGN PLACEMENT DETAILS.
22. 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.
23. CONSTRUCTION SIGNS SHALL BE IN NEW OR LIKE NEW CONDITION PER VTRANS STANDARDS AND SPECIAL PROVISIONS.
24. DIAMOND SHAPED SIGNS SHALL BE FOUR FOOT BY FOUR FOOT WITH BLACK TEXT AND BORDER ON A RETROREFLECTIVE FLUORESCENT ORANGE BACKGROUND.
25. RETROREFLECTIVE SHEETING SHALL BE AS NOTED ON VTRANS STANDARD T-1 AND IN SUBSECTION 750.08
26. WHERE TEMPORARY SIGNS ARE PLACED BEHIND GUARDRAIL, THEY SHALL BE ADJUSTED SUCH THAT THE BOTTOMS OF THE SIGNS ARE ABOVE THE TOP OF GUARDRAIL.
27. 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.
28. BARRELS AND CONES SHALL BE USED TO CLEARLY DEFINE THE TRAVEL SPACE AND PROVIDE SEPARATION FROM THE WORK SPACE ALONG ITS ENTIRE LENGTH BUT NOT MIXED FOR THE APPLICATION THEY ARE BEING USED FOR.
29. FOR LANE CLOSURES GREATER THAN 1/2 MILE LONG, PLACE ONE TYPE III BARRICADE ACROSS THE CLOSED LANE AT 1500 FOOT INTERVALS.
30. FOR TRAFFIC CONTROL GENERAL NOTES, SEE VTRANS STANDARD T-1.
31. TRAFFIC SHALL NOT BE CHANGED FROM ONE TRAFFIC PATTERN TO THE NEXT TRAFFIC PATTERN UNTIL ALL PAVEMENT MARKINGS, SIGNING AND SIGNAL WORK ARE COMPLETED. ANY CONFLICTING MARKINGS SHALL BE REMOVED.
32. CONSTRUCTION OPERATIONS SHALL BE ADJUSTED OR SUSPENDED DURING SPECIAL EVENTS AS IDENTIFIED IN THE CONTRACT DOCUMENTS AND DETERMINED BY THE ENGINEER.
33. ACCOMMODATIONS SHOULD BE TAKEN TO ENSURE THAT OBSTACLES, EQUIPMENT, CONSTRUCTION MATERIALS, TRAFFIC CONTROL DEVICES, ETC. DO NOT ENCROACH INTO THE BICYCLE PATH OF TRAVEL. IT IS IMPORTANT THAT THE CYCLIST'S ROUTES ARE FREE OF RUTS, SAND AND MUD TO PREVENT CYCLIST'S CRASHES. COMMUNICATIONS WITH BICYCLE ORGANIZATIONS THAT UTILIZE THIS ROUTE SHOULD OCCUR.
34. ACCOMMODATIONS FOR POSTAL DELIVERIES, NEWSPAPER ROUTES, TRASH SERVICES AND/OR OTHER DELIVERY SERVICES INTERRUPTED BY THE PROJECT OR DETOUR SHOULD BE COMMUNICATED WITH THE PROPER CONTACTS.

PROJECT NAME: WILLISTON  
PROJECT NUMBER: STP FPAV(10)

FILE NAME: z17v027detail.dgn PLOT DATE: 11/20/2018  
PROJECT LEADER: G. EDWARDS DRAWN BY: G. MERKLE  
DESIGNED BY: G. MERKLE CHECKED BY: J. LITTLE  
CONSTRUCTION APPROACH SIGNING SHEET 2 SHEET 47 OF 48



### TEMPORARY PEDESTRIAN TRAFFIC CONTROL NOTES:

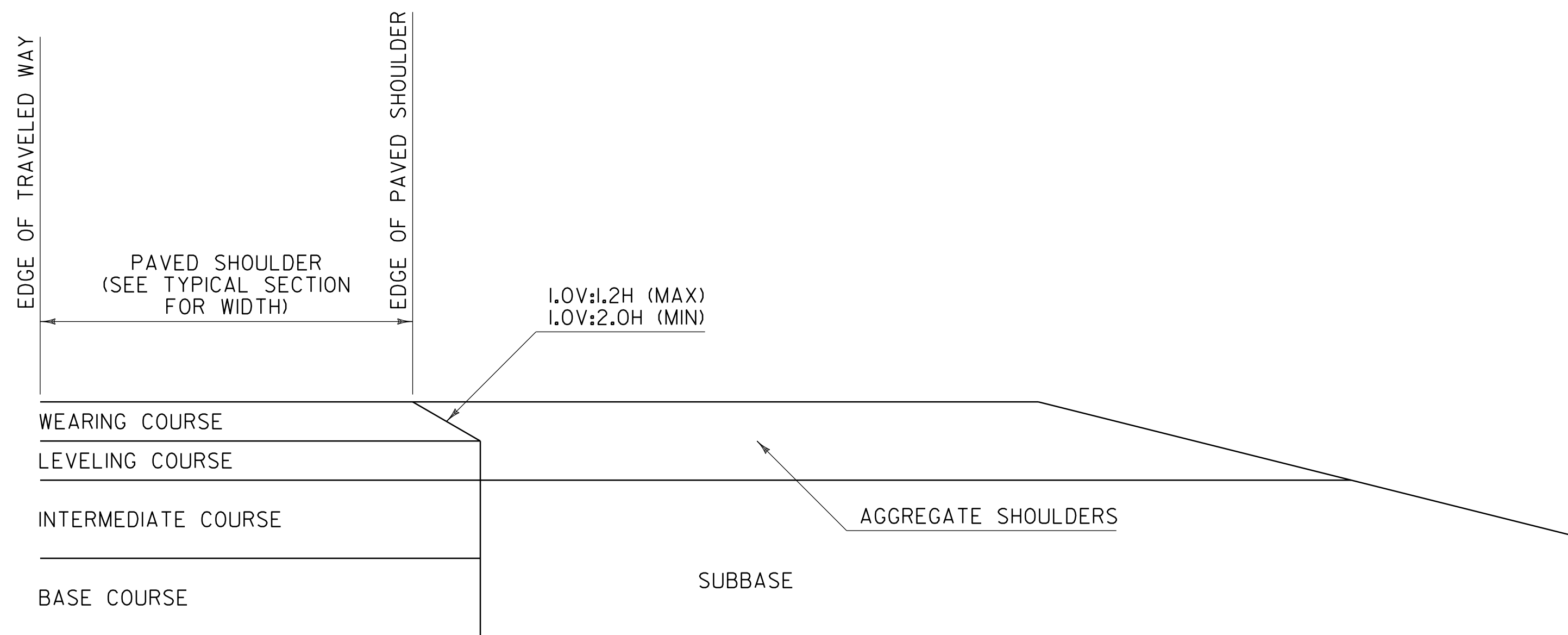
- I. THE CONTRACTOR SHALL PROVIDE A TEMPORARY PEDESTRIAN ACCESS ROUTE (TPAR) FOR REVIEW AND WRITTEN APPROVAL BY THE ENGINEER A MINIMUM OF THREE WEEKS BEFORE SUCH PLAN IS IMPLEMENTED. THIS PLAN SHALL DETAIL THE CONSTRUCTION PHASING AND SCHEDULE AND THE SPECIFIC METHODS OF MAINTAINING SAFE PEDESTRIAN ACCESS THROUGHOUT THE CONSTRUCTION AREA. THIS PLAN SHALL PROVIDE THE LOCATION AND DETAILS OF TEMPORARY CONSTRUCTION SIGNING, MARKINGS, BARRICADES, CHANNELIZING DEVICES, TPARS AND METHODS TO MAINTAIN ACCESS TO ADJACENT PROPERTIES, BUSINESSES, RESIDENCES, ETC.
2. THE CONTRACTOR SHALL MAINTAIN PEDESTRIAN THROUGH MOVEMENTS FROM ONE END OF THE CONSTRUCTION AREA TO THE OTHER, ON AT LEAST ONE SIDE OF THE STREET DURING CONSTRUCTION. ANY SIDEWALK CLOSURES SHALL MEET THE REQUIREMENTS OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), PART 6.
3. PEDESTRIAN ACCESS SHALL BE PROVIDED TO ALL ADJACENT PROPERTIES, BUILDINGS, RESIDENCES, COMMERCIAL PROPERTIES AND TRANSIT STOPS. THIS MAY INCLUDE TEMPORARY WALKWAYS SPANNING THE CONSTRUCTION AREA.
4. IF SIDEWALKS ARE CLOSED, A TEMPORARY PEDESTRIAN ACCESS ROUTE (TPAR) SHALL BE PROVIDED ON THE SAME SIDE OF THE ROAD AS THE CLOSED SIDEWALK, IF POSSIBLE. SIGNS AND BARRICADES SHALL BE USED TO PROVIDE ADVANCE NOTICE OF THE CLOSURE AND THE ROUTE OF ANY PEDESTRIAN DETOURS. THE TPAR SHALL HAVE A MINIMUM UNOBSTRUCTED WIDTH OF FOUR FEET. IF THE TPAR IS LESS THAN 5 FEET IN WIDTH, A FIVE FOOT BY FIVE FOOT PASSING SPACE MUST BE PROVIDED AT LEAST EVERY 200 FEET. THE SURFACE OF THE TPAR SHALL BE FIRM, STABLE AND SLIP-RESISTANT AND CONTINUOUS WITH A MINIMUM 80 INCHES OVERHEAD CLEARANCE FOR THE LENGTH OF THE TPAR. THE TPAR SHALL MAINTAIN THE SAME LEVEL OF ACCESSIBILITY AND DETECTABILITY AS THE FACILITY THAT IS BEING CLOSED. THE TPAR SHALL NOT LEAD PEDESTRIANS INTO CONFLICTS WITH VEHICLES, EQUIPMENT, OR CONSTRUCTION OPERATIONS.
5. WHEN TEMPORARY CROSSWALKS ARE UTILIZED FOR THE TPAR, TEMPORARY DETECTABLE WARNINGS SHALL BE PLACED AT EACH END OF THE TEMPORARY CROSSWALKS. THE TEMPORARY CROSSWALK SHALL BE DELINEATED WITH TEMPORARY PAVEMENT MARKINGS OR TAPE. THE MARKINGS SHALL BE PARALLEL 12-INCH-WIDE WHITE LINES PLACED SEVEN FEET ON CENTER APART. IT SHOULD BE NOTED THAT CURB PARKING SHALL BE PROHIBITED FOR AT LEAST 50 FEET IN ADVANCE OF MIDDLEBLOCK CROSSWALKS. TEMPORARY CROSSWALK SIGNS SHALL BE PROVIDED FOR THE CROSSWALK.
6. IF THERE IS WORK OCCURRING OVER AN OPEN SIDEWALK, PROTECTIVE OVERHEAD COVERING MUST BE PROVIDED AS NECESSARY TO ENSURE PROTECTION FROM FALLING OBJECTS AND DRIPPING FROM OVERHEAD STRUCTURES. COVERED WALKWAYS SHOULD BE STURDILY CONSTRUCTED AND ADEQUATELY LIGHTED FOR NIGHTTIME USE.
7. INDIVIDUAL CHANNELIZING DEVICES, TAPE, OR ROPE USED TO CONNECT INDIVIDUAL DEVICES AND OTHER DISCONTINUOUS BARRIERS AND DEVICES, PAVEMENT MARKINGS ARE NOT DETECTABLE BY PERSONS WITH VISUAL DISABILITIES. THESE MEASURES DO NOT PROVIDE ACCEPTABLE PATH GUIDANCE ON TEMPORARY OR RE-ALIGNED SIDEWALKS OR OTHER PEDESTRIAN FACILITIES. PEDESTRIAN CHANNELIZING DEVICES SHALL INCLUDE A CONTINUOUSLY DETECTABLE BOTTOM AND TOP EDGE THROUGHOUT THE LENGTH OF THE FACILITY SUCH THAT IT CAN BE FOLLOWED BY PEDESTRIANS USING LONG CANES FOR GUIDANCE.
8. CHANNELIZING DEVICES ON BOTH SIDES OF THE TPAR SHALL INCLUDE A CONTINUOUS SOLID TOP AND BOTTOM RAILS. THE TOP EDGE OF THE TOP RAIL SHALL BE BETWEEN 32 INCHES AND 38 INCHES ABOVE THE GROUND LEVEL. THE BOTTOM RAIL SHALL BE AT LEAST SIX INCHES WIDE, WITH THE BOTTOM EDGE OF THE BOTTOM RAIL SURFACE NO HIGHER THAN TWO INCHES ABOVE THE GROUND.
9. IF THE TPAR IS ADJACENT TO MOVING TRAFFIC, CONSTRUCTION OPERATIONS/EQUIPMENT, OR DROP-OFFS, THEN CRASHWORTHY CHANNELIZING DEVICES THAT MEET THE REQUIREMENTS OF THE MUTCD SHALL BE USED.
10. THE CONTRACTOR SHALL NOT STORE OR PLACE ANY CONSTRUCTION MATERIALS, EQUIPMENT OR SIGNS IN THE PEDESTRIAN PATH OF TRAVEL.
- II. PROVISION OF THE TPAR AND ALL ITS ELEMENTS, INCLUDING BUT NOT LIMITED TO SIGNS, CHANNELIZING DEVICES, BARRICADES, TEMPORARY CURB RAMPS, TEMPORARY PAVEMENT MARKINGS AND OTHER TRAFFIC CONTROL DEVICES IS TO BE PAID FOR INCIDENTAL TO TRAFFIC CONTROL (ITEM 641.10.)



PROJECT NAME: WILLISTON  
PROJECT NUMBER: STP FPAV(10)

FILE NAME: z17v027detail.dgn  
PROJECT LEADER: G. EDWARDS  
DESIGNED BY: G. MERKLE  
CONSTRUCTION APPROACH SIGNING SHEET 3

PLOT DATE: 11/20/2018  
DRAWN BY: G. MERKLE  
CHECKED BY: J. LITTLE  
SHEET 48 OF 48

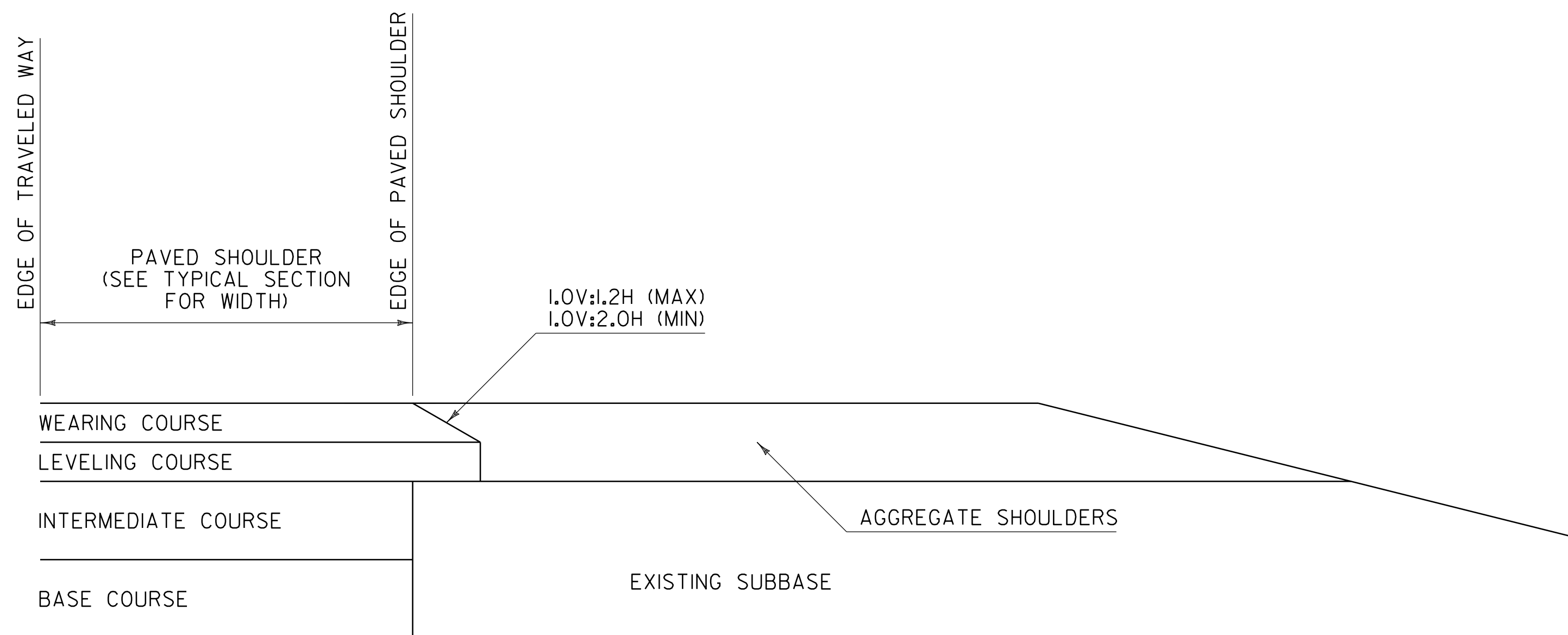


SAFETY EDGE DETAIL  
FOR PAVING BELOW WEARING COURSE

**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 SHOULDERS SHALL BE PREPARED FLUSH WITH THE BOTTOM OF THE LEVELING COURSE.
3. BASE COURSE LIMITS MAY VARY, SEE TYPICAL SECTIONS FOR WIDTH.

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



SAFETY EDGE DETAIL  
FOR PAVING WEARING COURSE ONLY

**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.

**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
1	JAN. 5, 2018	ANNOTATION CORRECTIONS
OTHER DETAILS REQUIRED: NONE		
DETAILS APPROVED FOR USE BY HIGHWAY SAFETY & DESIGN		

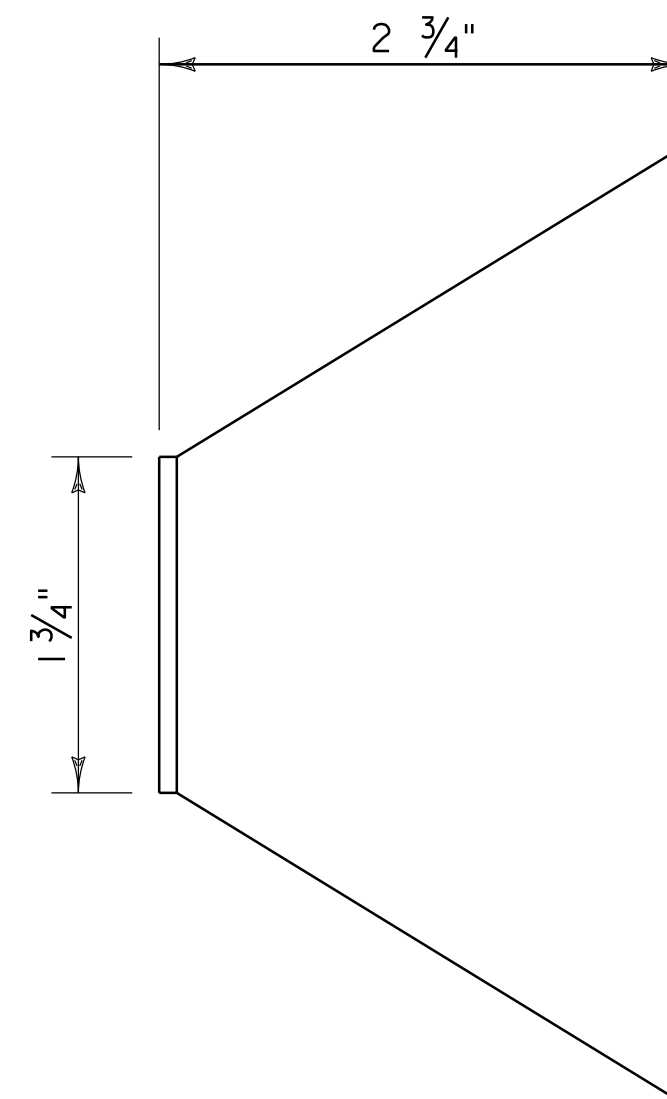
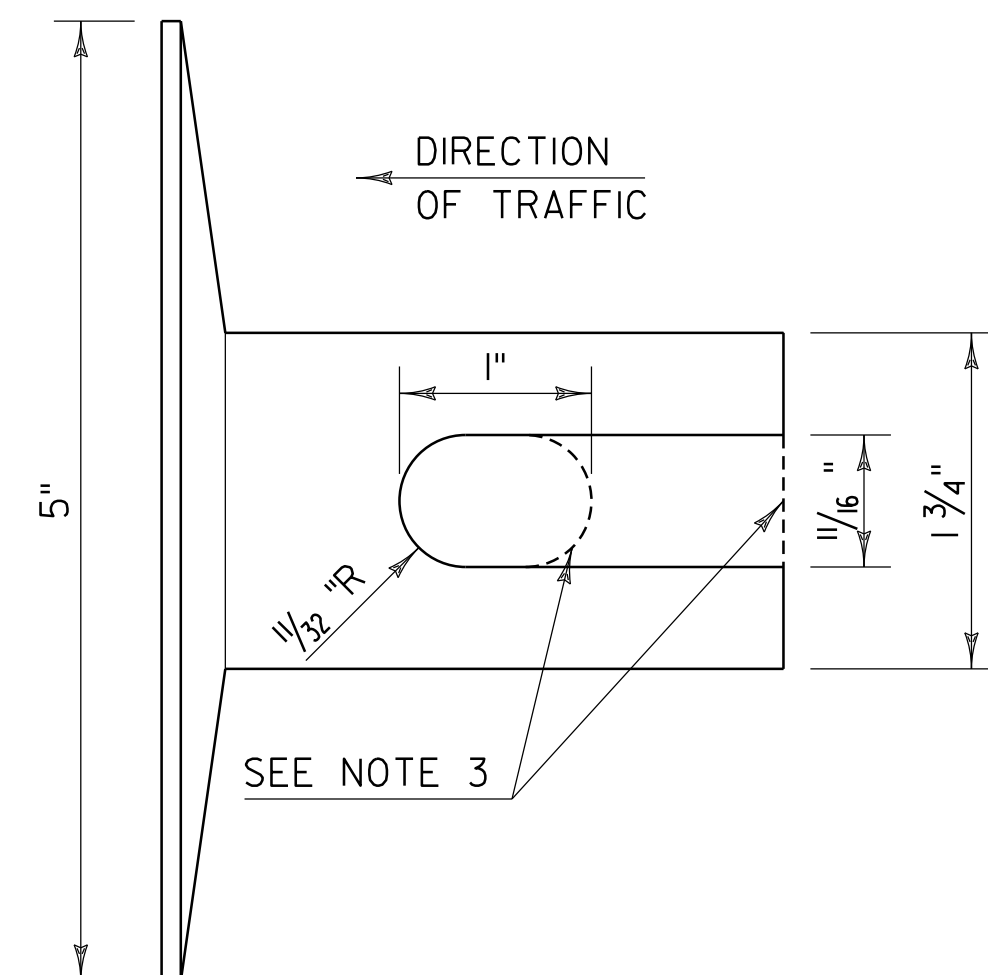
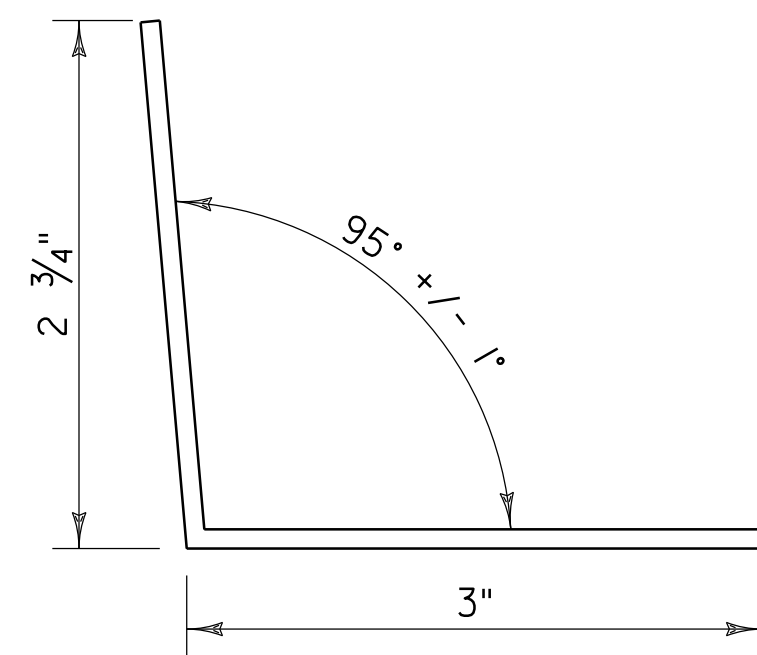
SAFETY EDGE DETAILS



HIGHWAY SAFETY  
& DESIGN DETAIL

HSD-400.01

### GUARDRAIL DELINEATOR DETAIL



#### NOTES:

1. GUARDRAIL DELINEATOR BASE MATERIAL SHALL BE 0.10 INCH THICK ALUMINUM IN ACCORDANCE WITH SUBSECTION 728.04 DELINEATION DEVICES.
2. GUARDRAIL DELINEATORS SHALL HAVE WHITE RETROREFLECTIVE SHEETING, EQUAL TO OR EXCEEDING TYPE III IN ACCORDANCE WITH SUBSECTION 750.08(B)(3) ON THE RIGHT SIDE OF THE TRAVELED WAY AND YELLOW RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING TYPE VII IN ACCORDANCE WITH SUBSECTION 750.08(B)(7) ON THE LEFT SIDE OF THE TRAVELED WAY IN RESPECT TO APPROACHING TRAFFIC. ON ONE DIRECTIONAL ROADWAYS RETROREFLECTIVE SHEETING MAY BE OMITTED ON FACES WHERE THERE WILL BE NO APPROACHING TRAFFIC.
3. HOLE MAY BE USED IN PLACE OF SLOT.

REV.	DATE	DESCRIPTION
0	NOV. 3, 2015	ORIGINAL APPROVAL
1	FEB. 27, 2017	UPDATED NAME, MINOR CORRECTIONS AND ADDED GUARDRAIL DELINEATOR DETAIL
OTHER DETAILS REQUIRED: NONE		
DETAILS APPROVED FOR USE BY HIGHWAY SAFETY & DESIGN		

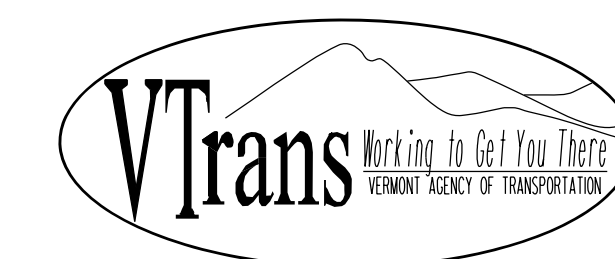
### GUARDRAIL TERMINAL LABEL DETAIL



#### NOTES:

- I. LINE ONE SHALL INDICATE THE INSTALLATION YEAR (YYYY).
- II. 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.
- III. LINE THREE SHALL INDICATE ADDITIONAL MODEL INFORMATION IF NECESSARY.
- IV. LINE FOUR SHALL INDICATE FLARED (FLRD) OR TANGENT (TANG).
5. LEGEND SHALL BE SIZE 3/4 INCH 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.
- II. PAYMENT SHALL BE INCIDENTAL TO OTHER TRAFFIC BARRIER ITEMS.

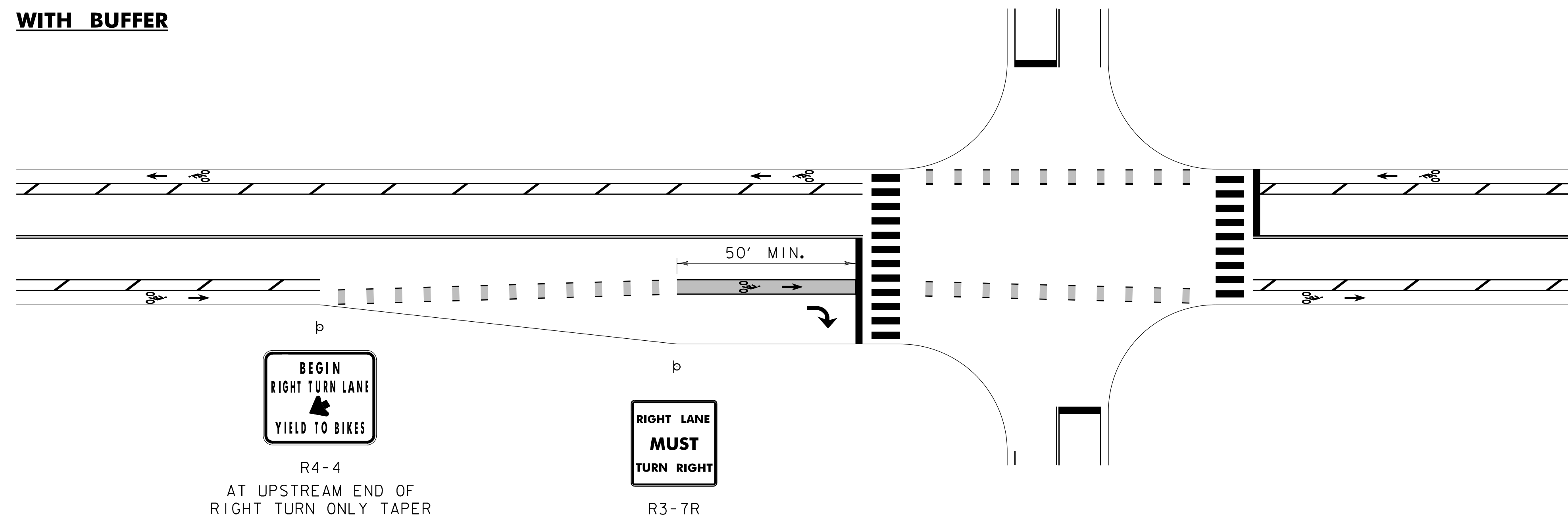
## MISCELLANEOUS GUARDRAIL DETAILS



HIGHWAY SAFETY  
& DESIGN DETAIL  
HSD-621.06



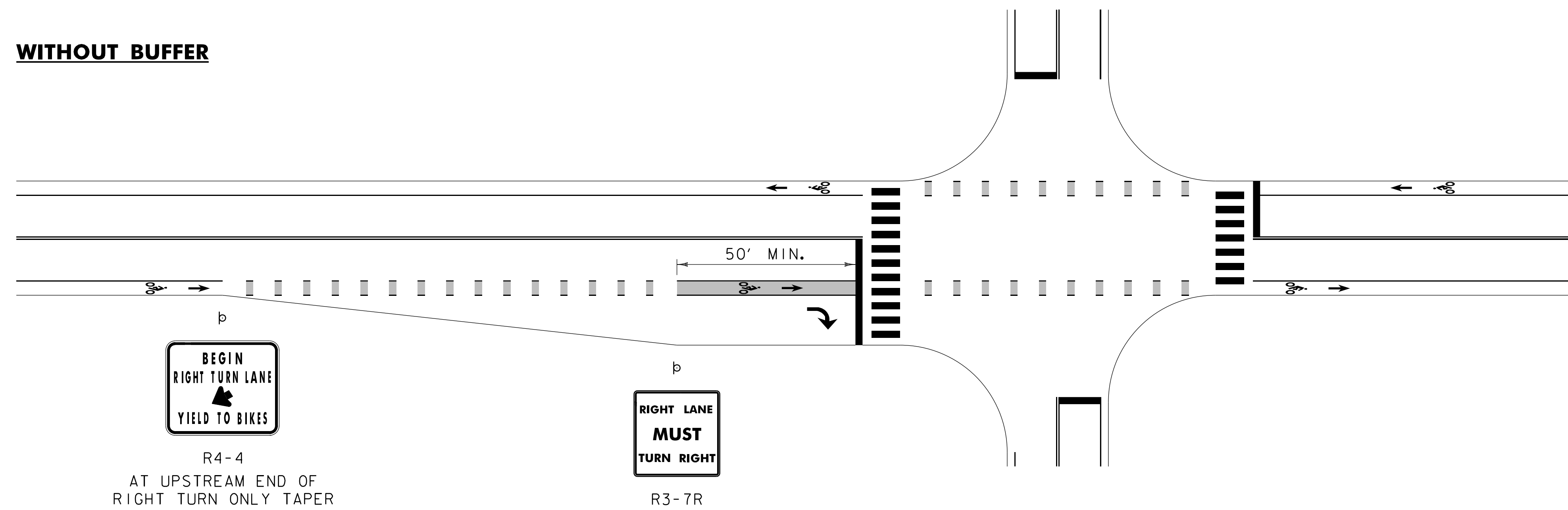
**WITH BUFFER**



**NOTE:**

- DIAGONAL HATCHING FOR THE BUFFER SHALL BE AT 37½ DEGREES AND SPACED AT 20 FOOT INTERVALS.

**WITHOUT BUFFER**



LEGEND

 GREEN PAVEMENT MARKING (TYP)

**GENERAL NOTES:**

- THE HELMETED BICYCLIST SYMBOL, PAVEMENT MARKINGS AND SIGNS SHALL BE USED IN ACCORDANCE WITH THE CURRENT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND ITS LATEST REVISIONS.
- DASHED PAVEMENTS MARKINGS SHALL BE 2 FOOT LONG DASHES WITH 6 FOOT LONGITUDINAL SPACING.
- GREEN PAVEMENT MARKING MATERIAL SHALL BE AS SPECIFIED IN THE CONTRACT DOCUMENTS.

REV.	DATE	DESCRIPTION
0	FEB. 25, 2016	ORIGINAL APPROVAL
1	FEB. 27, 2017	REVISED GREEN MARKINGS WITHIN CONFLICT AREAS
OTHER DETAILS REQUIRED: NONE		
DETAILS APPROVED FOR USE BY HIGHWAY SAFETY & DESIGN		

BICYCLE MARKINGS AT INTERSECTIONS



HIGHWAY SAFETY & DESIGN DETAIL

HSD-646.01