

GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES



DEPARTMENT OF PUBLIC WORKS

DESCRIPTION OF PROJECT:

PAVEMENT REHABILITATION, RESTORATION,
RESURFACING, DRAINAGE IMPROVEMENTS
SIDEWALK SIGNALIZATION AND OTHER
MISCELLANEOUS WORK

PROJECT LENGTH

ROUTE 81: 2.51 MILES

FUNCTIONAL CLASS

ROUTE 81
RURAL COLLECTOR ROAD
ADT..... 3,220
DHV..... 610
D..... 50/50
V(MPH)..... 35
E..... 2%

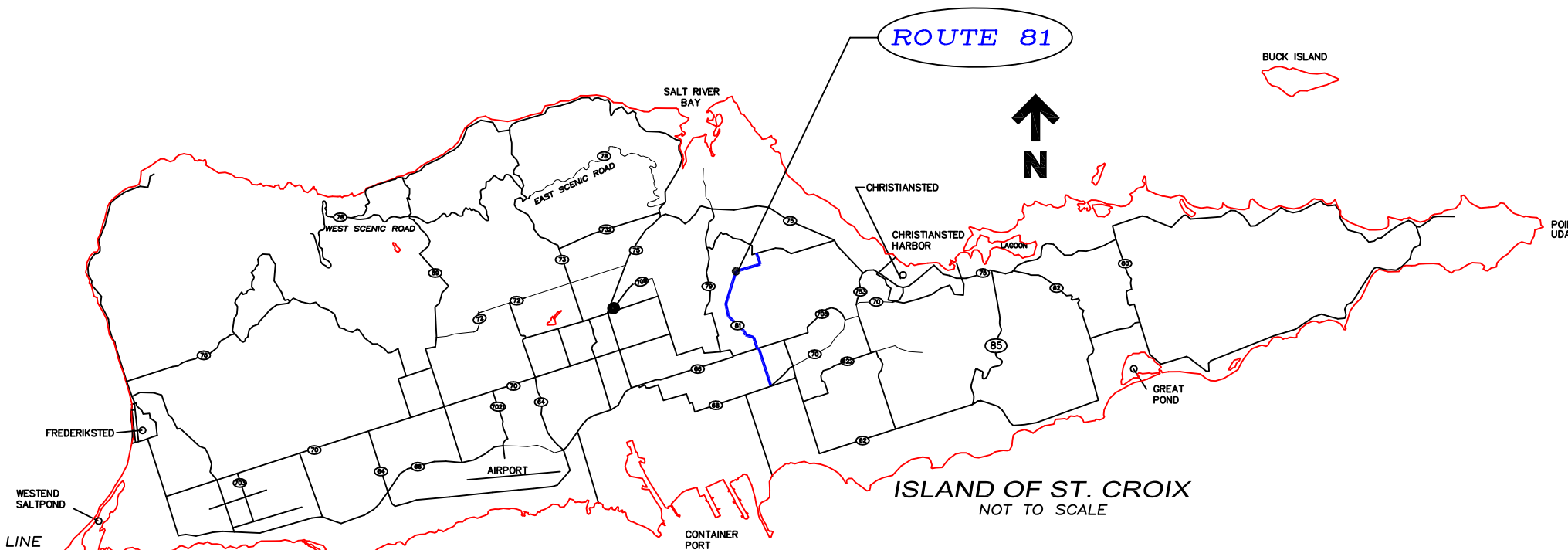
LEGEND

WV	WATER VALVE
WM	WATER METER
WL	WATER LINE
HYD	HYDRANT
⚡	POWER POLE
☆	LIGHT POLE
—○—	FENCE LINE
—x—	BARBED WIRE LINE
— —	GUARDRAIL
□	BOUNDARY
●	EXISTING TREE
—	EXISTING SIGN
—	NEW SIGN
—FIBER—	UNDERGROUND TELEPHONE LINE
—ELEC—	UNDERGROUND ELECTRICAL LINE
—TELE—	UNDERGROUND TELEPHONE LINE
Ⓢ	UNDERGROUND WASTE LINE
ⓔ	UNDERGROUND ELECTRICAL LINE MANHOLE
Ⓢ	UNDERGROUND VINGN DATA LINE MANHOLE
Ⓢ	UNDERGROUND COMMUNICATION LINE MANHOLE
▨	REINFORCED CONCRETE PAVEMENT
▨	PAVED WATERWAY TYPE IV
▨	ROADWAY RECONSTRUCTION
▨	ASPHALT PAVEMENT MILLING
▨	RIP RAP CLASS III
▨	EMBANKMENT CONSTRUCTION
▨	CONCRETE SIDEWALK
▨	CONCRETE SIDEWALK & STRUCTURAL FILL

THIS PROJECT IS TO BE CONSTRUCTED IN ACCORDANCE WITH
STANDARD SPECIFICATIONS FOR CONSTRUCTION OF ROADS AND
BRIDGES ON FEDERAL HIGHWAY PROJECTS FP-14.

SECTION W (CONSTRUCTION PLANS) ATTACHMENT 1

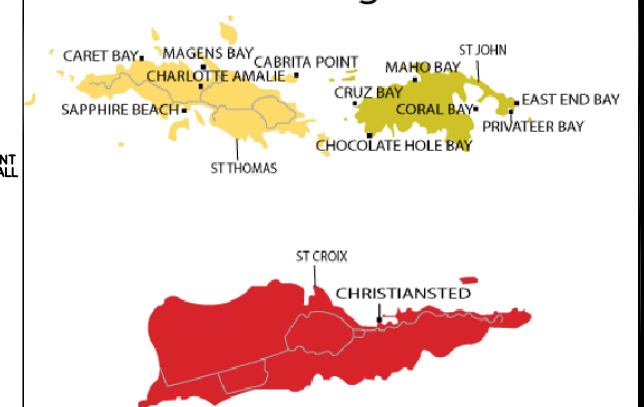
PLANS FOR THE CONSTRUCTION OF SION VALLEY ROAD PAVEMENT REHABILITATION PROJECT NO. VI-0081(002) ROUTE 81



INDEX TO SHEETS

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A1	TITLE SHEET
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B1	SUMMARY OF QUANTITIES
B2	GENERAL NOTES
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E1-E12	UTILITY RELOCATION PLAN
F1-F6	ROW PLAN
G1-G26	STANDARD DETAILS
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G36-G40	SIGNALIZATION STANDARD DETAILS SION FARM
G41-G42	HAND RAILING

Virgin Island U.S.



DEPARTMENT OF PUBLIC WORKS



OFFICE OF HIGHWAY ENGINEERING
6002 ESTATE ANNA'S HOPE
ST. CROIX, USVI

Approved: _____ Date _____
Gustav James, P.E.
Commissioner Designee:
Department of Public Works

DESIGNED BY:
OFFICE OF HIGHWAY ENGINEERING

SION VALLEY ROAD PAVEMENT REHABILITATION AND DRAINAGE

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	B1	97

ROUTE & LOCATION				
ITEM NO.	DESCRIPTION	UNIT	RT81 SION VAL	TOTAL
15101	Mobilization	L.S.	1	1
15201	Construction Survey & Stakeout	L.S.	1	1
15401	Contractor Sampling and Testing	L.S.	1	1
15701(A)	Soil Erosion Control - Silt Fence	L.F.	2,500	2,500
15701(B)	Soil Erosion Control - Temporary Inlet Protection Type C	EA.	6	6
20101	Clearing and Grubbing - Clear ROW and Tree Removal	MI.	1.50	2
20301(A)	Removal of Structure - Removal of Headwall and Basin	EA.	4	4
20301(B)	Removal of Structure - Removal of 18" and 24" Pipe Culvert	L.F.	80	80
20301(C)	Removal of Structure - Removal of Sidewalk	S.Y.	300	300
20301(D)	Removal of Structure - Removal of Chain Link Fence	L.F.	850	850
20401	Roadway Excavation - Ditch Slope, Grade and Shape	C.Y.	250	250
20901	Structural Backfill Foundatuion for Sidewalk	C.Y.	3,140	3,140
25101	Grouted Rip Rap, Class II	C.Y.	50	50
30101	Untreated Aggregate Courses, Aggregate Grading "C" 15" D	S.Y.	80	80
30301	Road Reconditioning of Shoulders and Ditches	L.F.	11,500	11,500
40301(A)	WACP, Class-"A",Grading-"C"(Surface Course) - 2"	TON	4,000	4,000
40301(B)	WACP, Class-"A",Grading-"C"(Base Course) - 4"	TON	300	300
40301(C)	WACP, Class-"A",Grading-"C"(Wedge and Leveling)	TON	2,934	2,934
41102	Asphalt Prime Coat, Grade RS-1	GAL.	750	750
41202	Asphalt Tack Coat, Grade RS-1	GAL.	6,500	6,500
41301	Asphalt Milling 1" to 4" Depth	S.Y.	2,900	2,900
41801	Asphalt Concrete Pavement Patching FDP-1	S.Y.	3,500	3,500
50101	Minor Concrete Pavement- Low Water Crossing	S.Y.	310	310
50201	Concrete Pavement Restoration Full depth Patching	S.Y.	350	350
60101	Minor Concrete Structures - Headwall	C.Y.	18	18
60201(A)	Culverts and Drains-18" Reinforced Concrete Pipe, Class-IV	L.F.	900	900
60201(B)	Culverts and Drains-30" x19" Elliptical Pipe, Class-IV	L.F.	384	384
60401(A)	Inlets Type 6A-6 w/3'x2' Metal Frame & Grate	EA.	7	7
60401(B)	Inlets Type 5B w/4'x4' Metal Frame & Grate	EA.	8	8
60401(C)	Inlets Type 4D Gutter Plate, Curb Box, Solid Lid	EA.	8	8
60401(D)	Maniole - Adjust Manhole Ring	EA.	27	27
60801	Paved Waterway, Type 4	S.Y.	1,750	1,750
60901(A)	Curb and Gutter 7" Depth	L.F.	6,980	6,980
60901(B)	Curb 18" Depth	L.F.	950	950
61101(A)	Adjust Water Valves	EA.	3	3

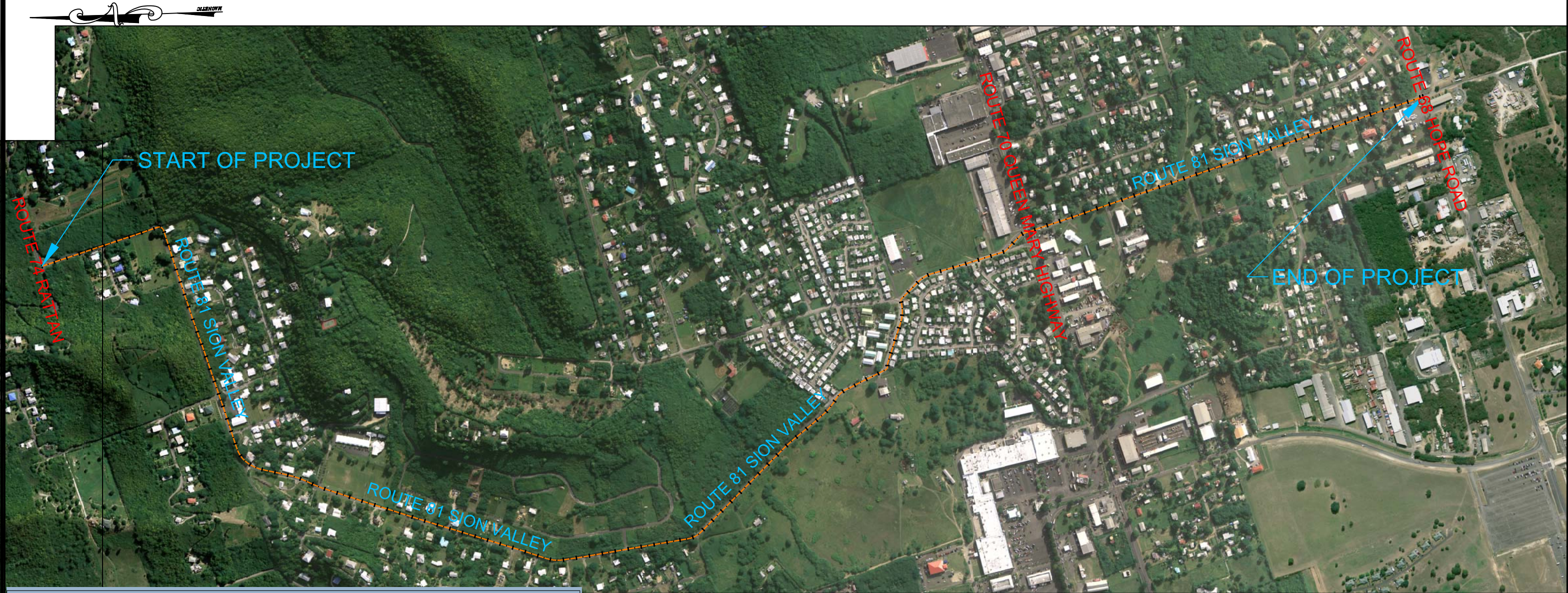
ROUTE & LOCATION				
ITEM NO.	DESCRIPTION	UNIT	RT81 SION VAL	TOTAL
61101(B)	Adjust Water Meter Box	EA.	10	10
61901(A)	Remove and Construct New Chain Link Fence	L.F.	850	850
61501	Porltand Cement Concrete Sidewalk	S.Y.	4,350	4,350
61701	Guardrail - Guardail Type W-Beam and Rounded Ends	L.F.	40	40
61901	Remove and Construct New Chain Link Fence	L.F.	850	850
63301(A)	Permanent - New Sign Aluminum Panels, Type IX Sheeting	S.F.	940	940
63301(B)	Permanent - Sign Remove and Reset	EA.	6	6
63301(C)	Permanent - Remove Old Sign	EA.	40	40
63401(A)	Permanent Markings - Thermoplastic, Type H(6" White)	L.F.	30,400	30,400
63401(B)	Permanent Markings - Thermoplastic, Type H(4" Yellow)	L.F.	28,200	28,200
63401(C)	Permanent Markings - Thermoplastic, Type H(24" Wht/Ylw)	L.F.	1,250	1,250
63401(D)	Permanent Markings - Raised Pavement Markers (Arrows)	S.F.	400	400
63401(E)	Permanent Markings - Raised Pavement Markers (Wht/Ylw)	EA.	2,500	2,500
63501(A)	Temporary Traffic Control - Barricade, Type III	EA.	6	6
63501(B)	Temporary Traffic Control - Cone, (36" Height)	EA.	80	80
63501(C)	Temporary Traffic Control - Construction Signs	S.F.	950	950
63501(D)	Temporary Traffic Control - Drums, Type III Retroreflective	EA.	125	125
63501(E)	Temporary Traffic Control - Warning Light Type "A"	EA.	40	40
63601(A)	Signal, Lighting, and Electrical System- Complete Traffic Sys.	L.S.	1	1
63601(B)	Electrical System- 14 AWG, 19 Conductor Electrical Wire	L.F.	500	500
63601(C)	Electrical System- 14 AWG, 7 Conductor Electrical Wire	L.F.	1,200	1,200
63601(D)	Electrical System- 3" PVC Schedule 80 Conduit, Concreted	L.F.	400	400
63601(E)	Electrical System- 2" PVC Schedule 80 Conduit, Concreted	L.F.	250	250
63601(F)	Electrical System- Traffic Camera Video Detection System	EA.	4	4
63601(G)	Electrical System- Pull box Type I	EA.	8	8
64601	Sidewalk Pedestrian Handrails	L.F.	1,700	1,700

SEE GENERAL NOTES WHICH APPLY TO THESE ITEMS ON SHEET B-2

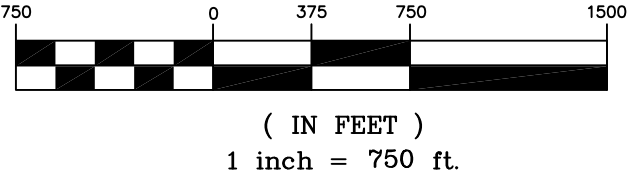
DEPARTMENT OF PUBLIC WORKS
OFFICE OF HIGHWAY ENGINEERING

SUMMARY OF
PAY QUANTITIES

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	A2	97



**CONSTRUCTION
AREA ROUTE 81
SION VALLEY RD**



DEPARTMENT OF PUBLIC WORKS
OFFICE OF HIGHWAY ENGINEERING

ROUTE 81
LOCATION

SION VALLEY ROAD PAVEMENT REHABILITATION ROUTE 81

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	B2	97

1. ALL TEMPORARY TRAFFIC CONTROL FUNCTIONS SUCH AS TRAFFIC CONTROL PLAN, MAINTAINING, RELOCATING, FLAGGING AND MOVING TEMPORARY TRAFFIC CONTROL DEVICES AS PER THE MUTCD FOR THE CONTROL AND PROTECTION OF THE PUBLIC TRAFFIC THROUGH THE PROJECT AREAS WILL BE SUBSIDIARY TO 63501 ITEMS.

2. WHENEVER THE TRAFFIC CONTROL PLAN REQUIRES DETOURING OF TRAFFIC, THE TRAFFIC DETOUR PLAN SHALL NOT BE IMPLEMENTED DURING PEAK TRAFFIC HOURS. PEAK TRAFFIC HOURS ARE BETWEEN 7:00AM TO 9:00AM AND BETWEEN 3:00PM TO 6:00PM.

3. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING AND WORKING WITH ALL UTILITY COMPANIES IN LOCATING AND THE RELOCATION OF ANY UTILITY LINES AND STRUCTURES ON THIS PROJECT ACCORDING TO PARAGRAPH 28 OF THE GENERAL PROVISIONS. ALL UNDERGROUND LINES MUST BE LOCATED PRIOR TO EXCAVATION.

4. ITEM 41801 FULL DEPTH RECONSTRUCTION SHALL INCLUDE REMOVAL AND DISPOSAL OF ALL ASPHALT PAVEMENT AT AREAS TO BE RECONSTRUCTED AND PATCHED.

5. ITEM 50101 AND 50201 SHALL INCLUDE ALL SAW CUTTING NECESSARY TO OBTAIN A NEAT EDGE, REMOVAL AND DISPOSAL OF CONCRETE, AND ANY NECESSARY EXCAVATION.

6. THE CONTRACTOR SHALL PERFORM COMPACTION TESTS WITH A NUCLEAR GAUGE ON A DAILY BASIS WHEN COMPACTION OF MATERIAL IS IN PROGRESS. A MINIMUM OF ONE COMPACTION TEST MUST BE PERFORMED PER LIFT AND ALL TESTS RESULTS SHALL BE SUBMITTED TO DPW FOR REVIEW AND APPROVAL. THE CONTRACTOR MUST ACHIEVE 95% DENSITY PRIOR TO PLACING ANY ADDITIONAL LIFTS.

7. THE DPW SHALL BE NOTIFIED AT LEAST 24 HOURS IN ADVANCE OF CONCRETE POURS. TESTING OF THE CONCRETE SHALL CONFORM TO THE FP-14.

8. AS PART OF THE EDC INITIATIVE THIS PROJECT REQUIRES WARM MIX ASPHALT PAVEMENT TO BE USED FOR ITEMS 40301(A),(B),(C). THE CONTRACTOR WILL BE REQUIRED TO PRODUCE, PLACE, AND COMPACT ASPHALT PAVEMENT BETWEEN 30° TO 120° LOWER THAN HOT MIX ASPHALT PAVEMENT.
9. AS PART OF THE EDC INITIATIVE THIS PROJECT REQUIRES THAT SAFETY EDGE BE USED ON THIS PROJECT FOR ITEMS 40301(A).

10. GUARDRAIL FOR THIS PROJECT WILL BE W-BEAM TYPE II, CLASS B. THE COST FOR PLACING LONGER POSTS WHERE REQUIRED WILL BE SUBSIDIARY TO 61701(A).

11. ITEM 40301(C) WEDGE AND LEVELING SHALL BE USED AS NECESSARY WITH THE APPROVAL FROM THE CO PRIOR TO PLACING ASPHALT. THE CONTRACTOR SHALL NOT PLACE WEDGE AND LEVELING ASPHALT COURSE AT AREAS THAT WERE RECONSTRUCTED UNLESS DIRECTED TO DO SO BY THE CO.

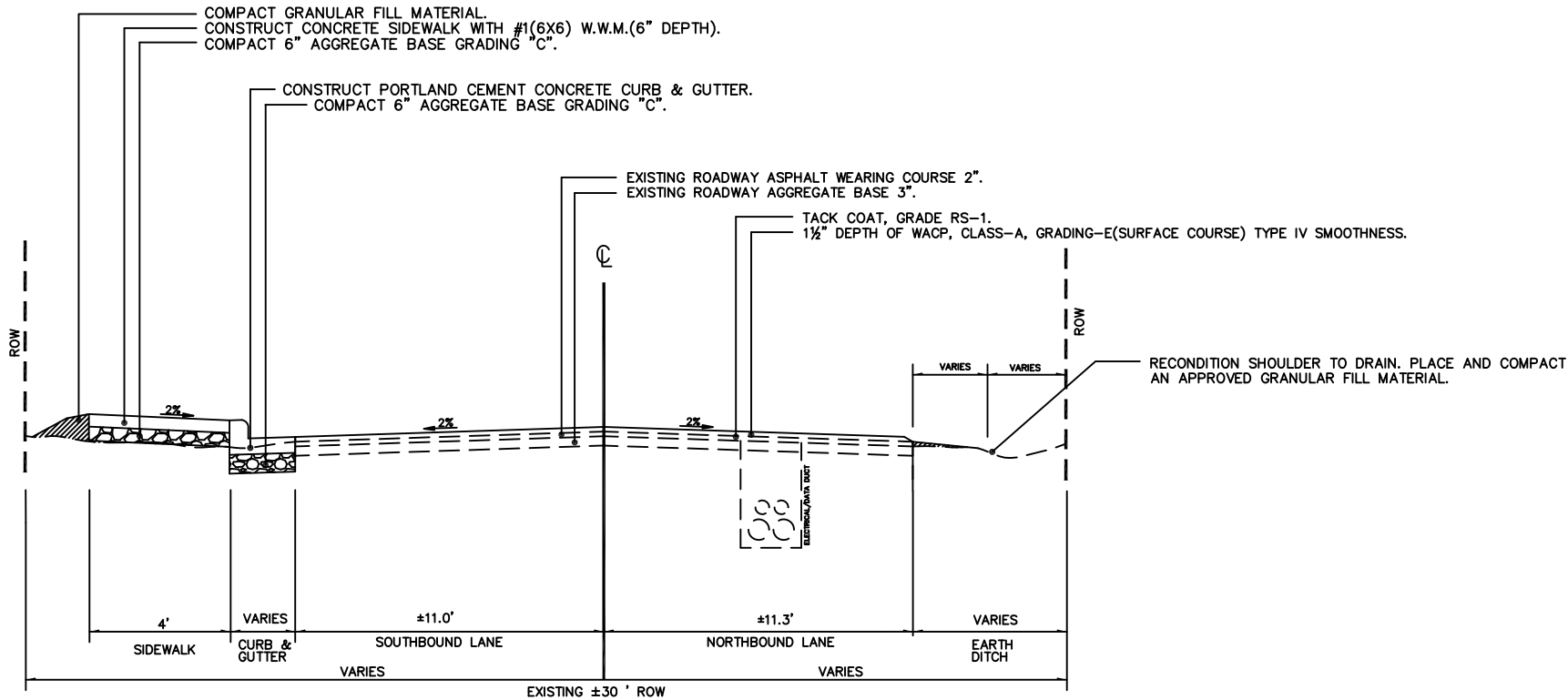
12. ITEM 20101 INCLUDES REMOVAL OF TREES AND TREE STUMPS.

13. ITEM 15201 SURVEY AND STAKING – THE CONTRACTOR MUST ESTABLISH A CENTERLINE PROFILE OF THE EXISTING ROADWAY AS THE BASIS FOR CONSTRUCTION TO ESTABLISH HORIZONTAL AND VERTICAL CONTROL FOR CONSTRUCTION ACCORDING TO THE TYPICAL CROSS SECTION DETAILS.

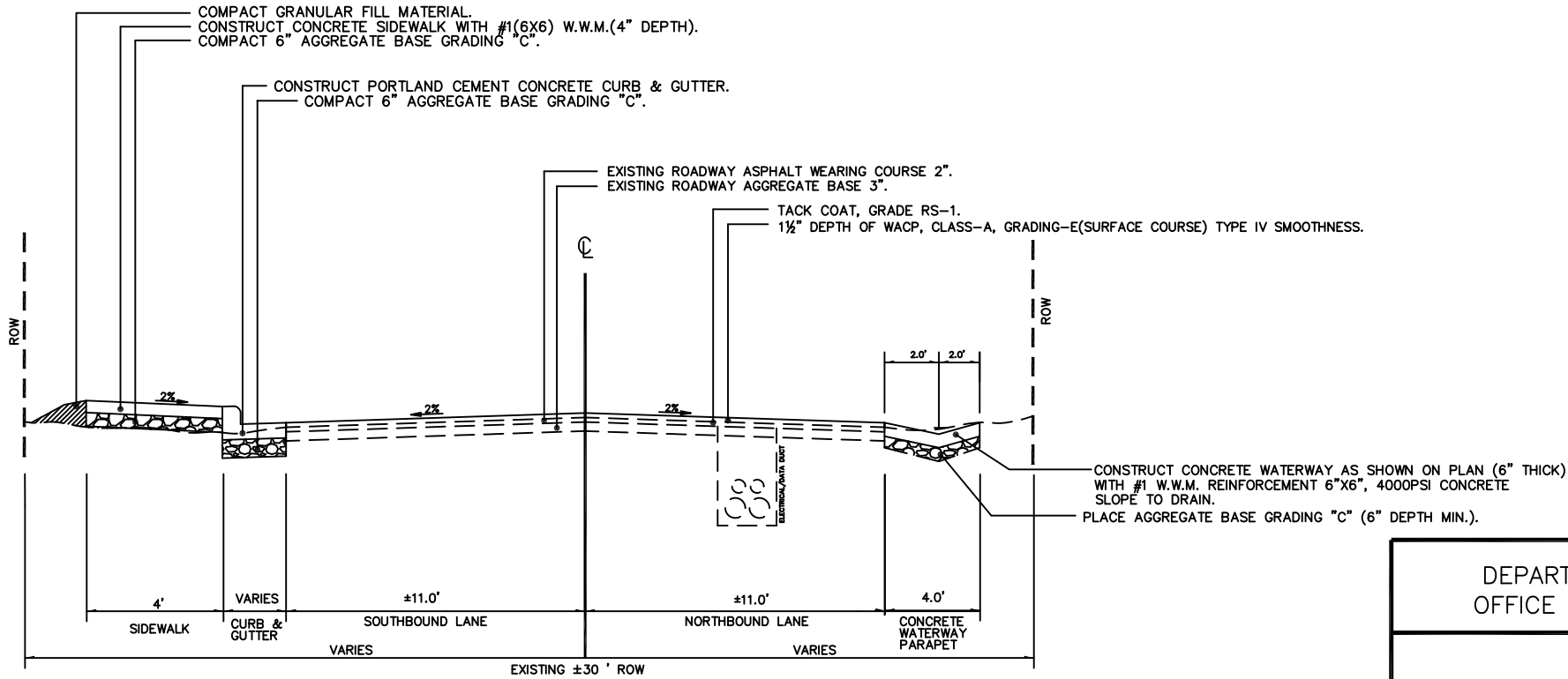
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GENERAL NOTES

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	C1	97



1 **ROUTE 81 TYPICAL SECTION RECONDITIONING ROADWAY OVERLAY**
STA. 00+00 TO 14+00



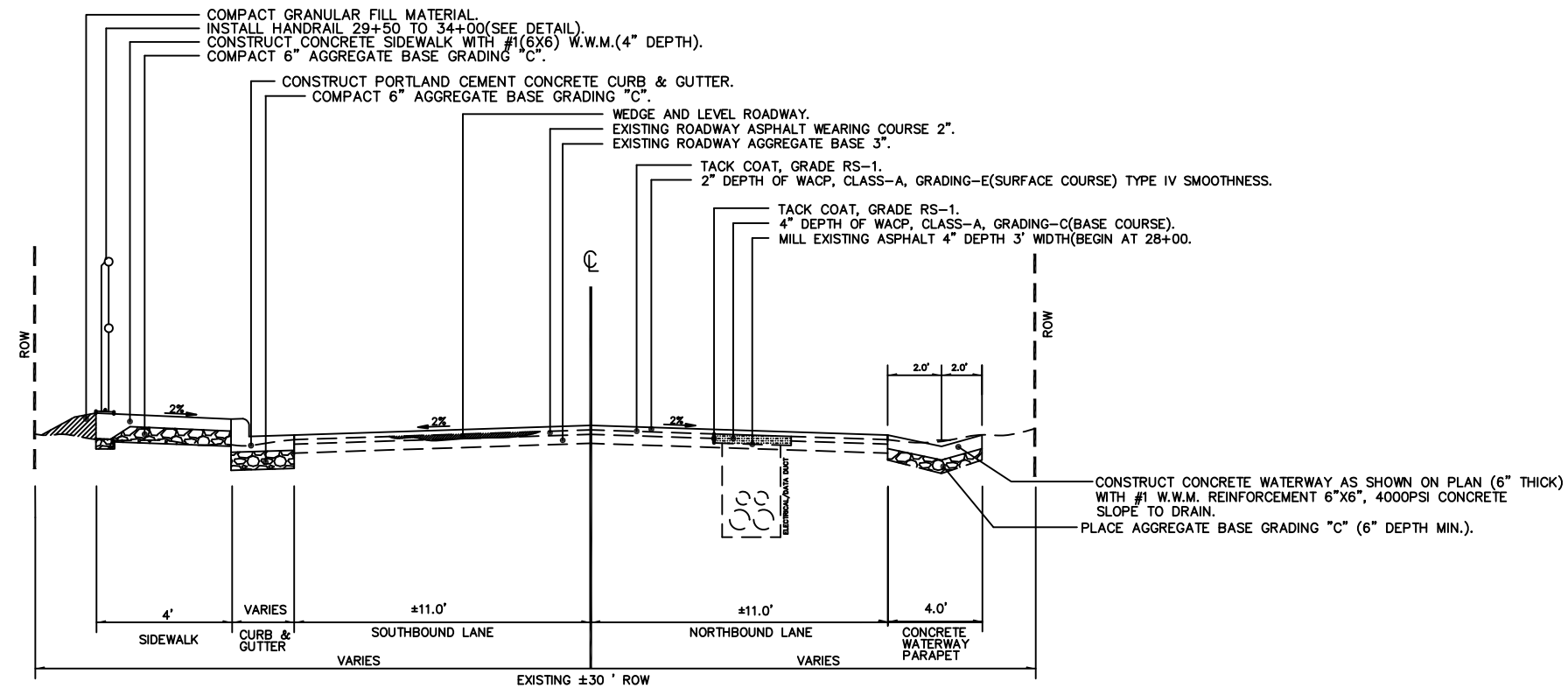
2 **ROUTE 81 TYPICAL SECTION RECONDITIONING ROADWAY OVERLAY**
STA. 22+00 TO 28+00

NOT TO SCALE

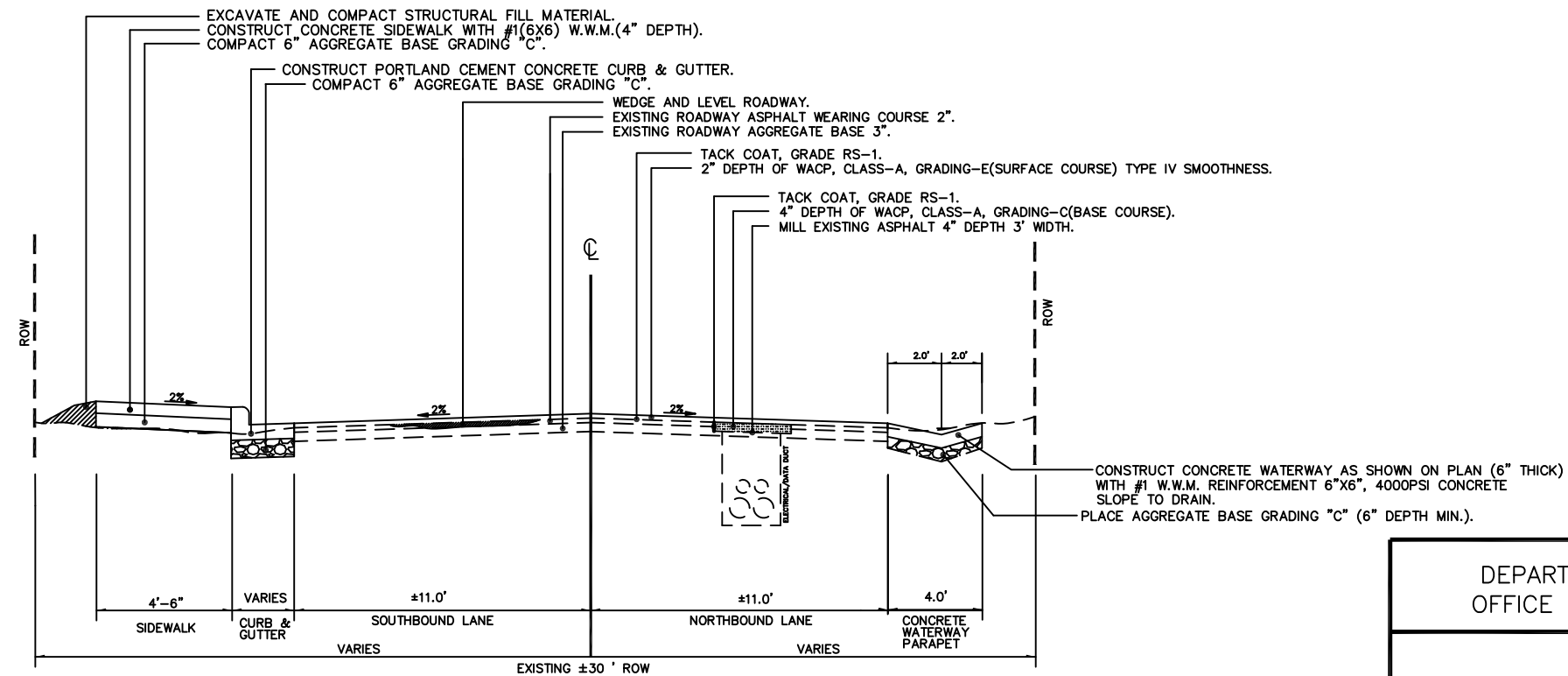
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TYPICAL CROSS SECTION
ROUTE 81

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	C2	97



**③ ROUTE 81 TYPICAL SECTION RECONDITIONING ROADWAY OVERLAY
STA. 28+00 TO 43+50**

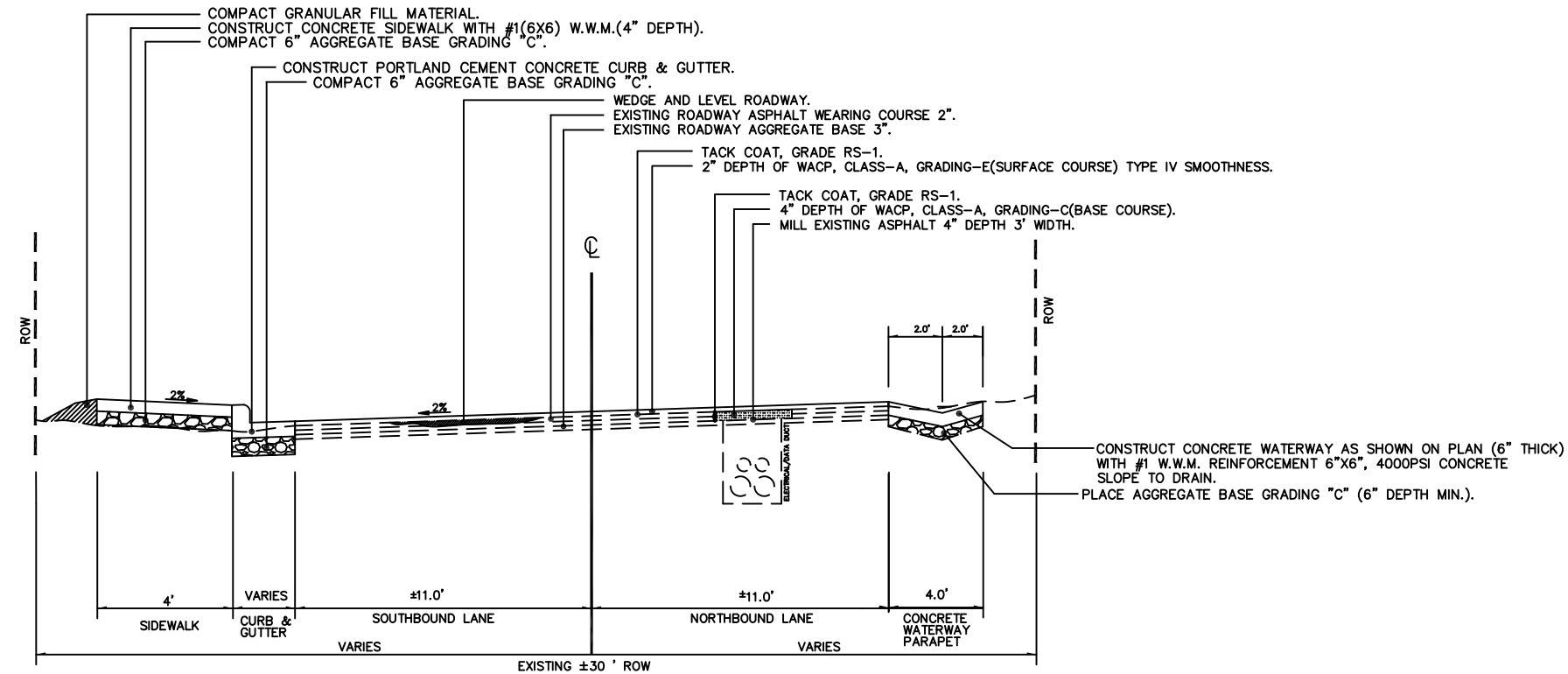


**④ ROUTE 81 TYPICAL SECTION RECONDITIONING ROADWAY OVERLAY
STA. 45+50 TO 52+50//54+00 TO 59+10**

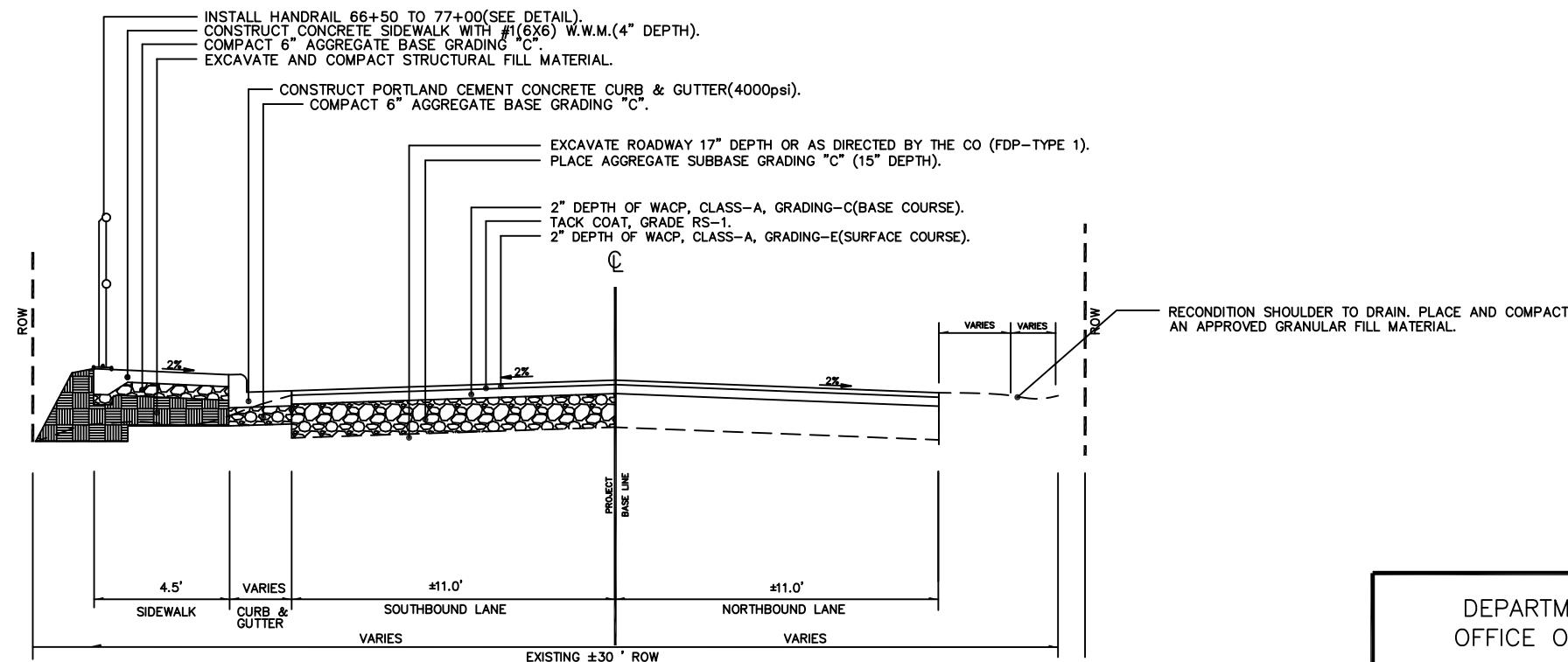
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TYPICAL CROSS SECTION
ROUTE 81

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	C3	97



**⑤ ROUTE 81 TYPICAL SECTION RECONDITIONING ROADWAY OVERLAY
STA. 43+50 TO 45+50//52+50 TO 54+00//63+50 TO 65+00**

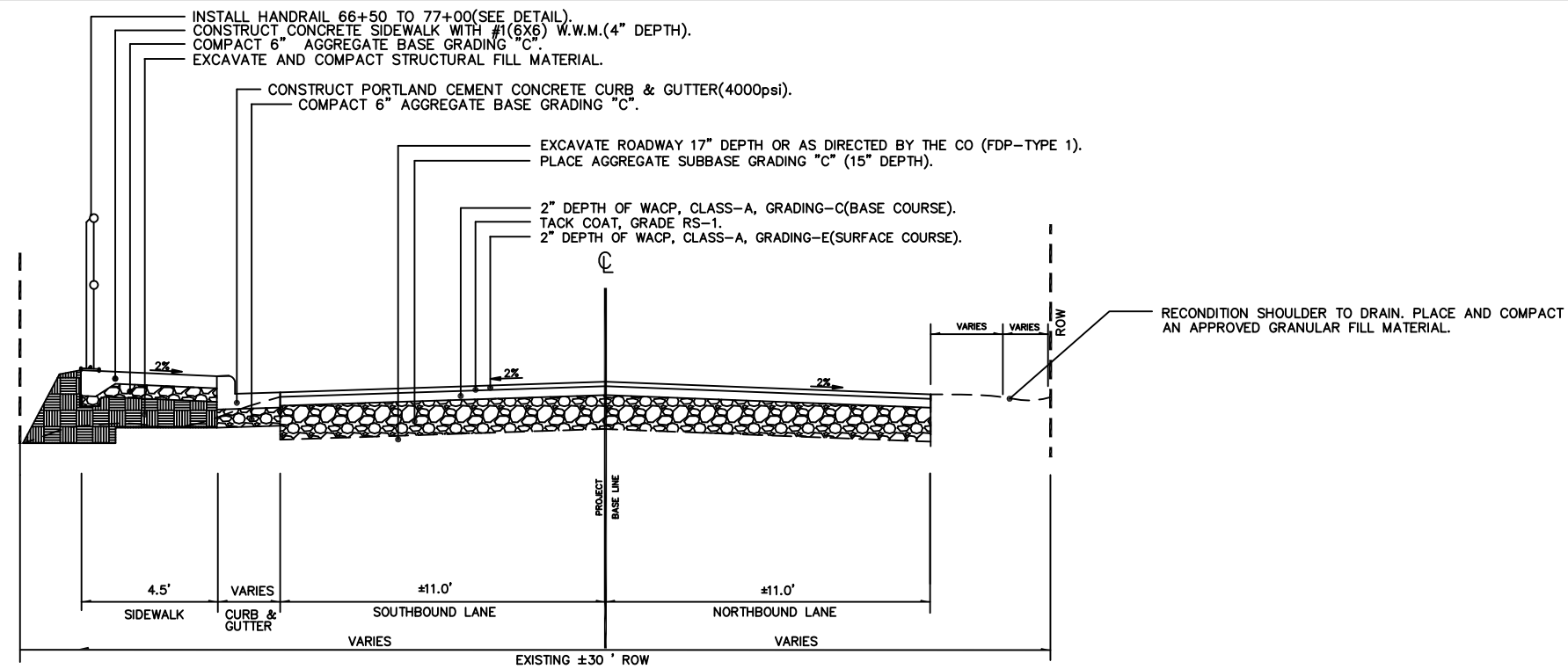


**⑥ ROUTE 81 TYPICAL SECTION FULL DEPTH RECONSTRUCTION(FDP-1)
STA. 65+00 TO 71+05//72+10 to 78+50**

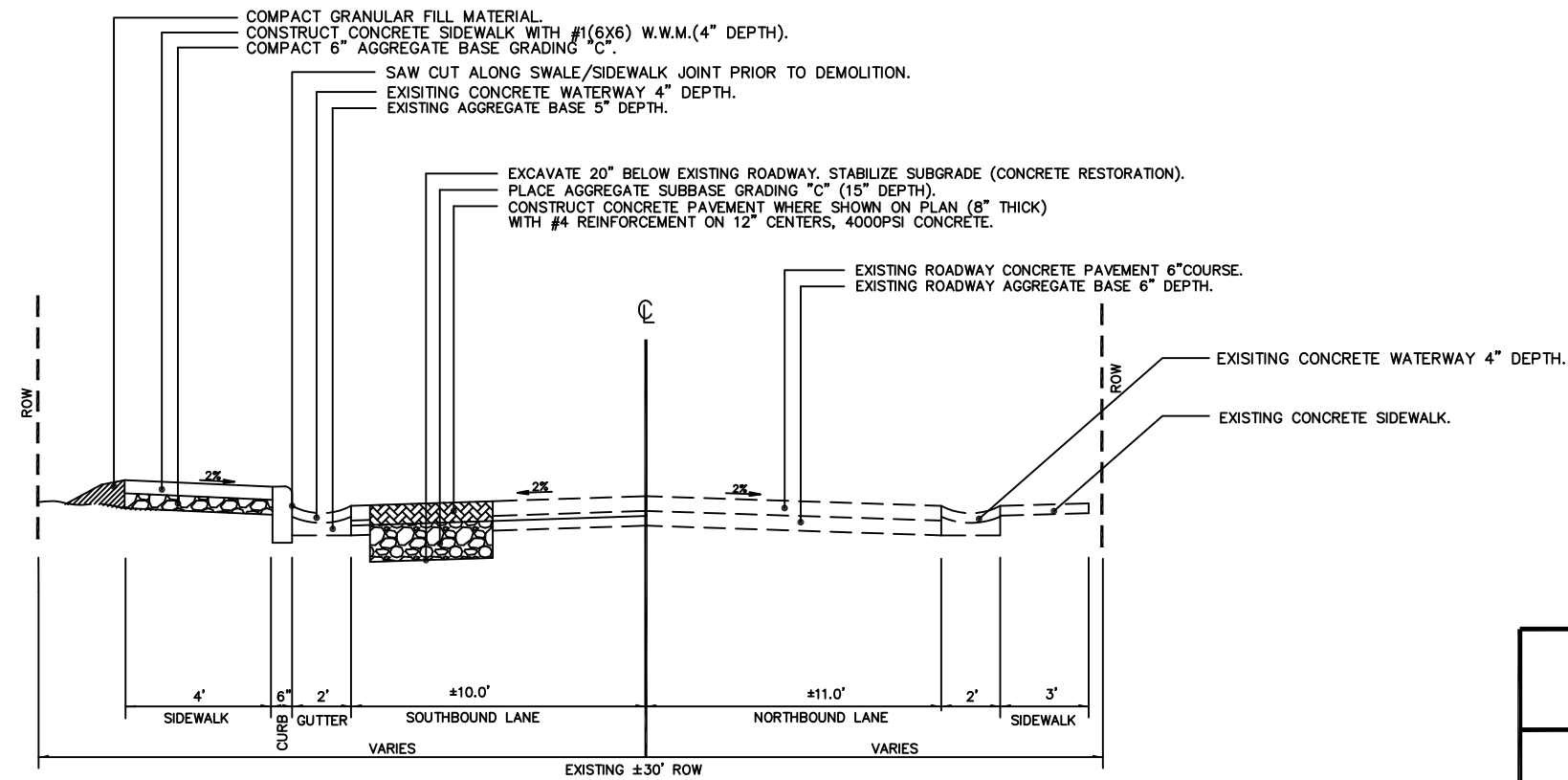
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TYPICAL CROSS SECTION
ROUTE 81

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	C4	97



7 ROUTE 81 TYPICAL SECTION FULL DEPTH RECONSTRUCTION (FDP-1)
STA. 71+05 TO 72+10



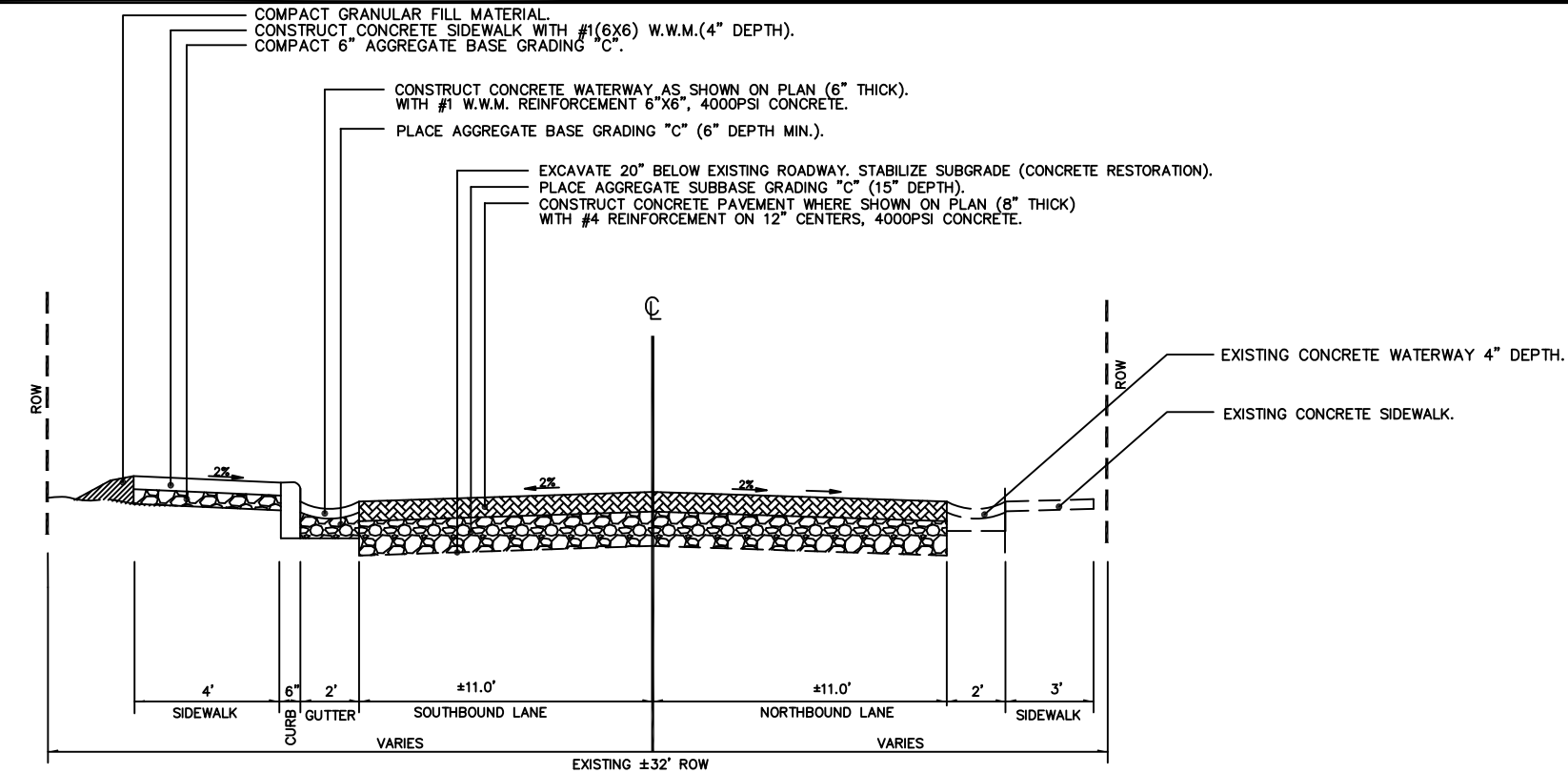
8 ROUTE 81 TYPICAL SECTION RESTORATION CONCRETE PATCHING
STA. 78+50 TO 83+40//84+15 TO 89+00

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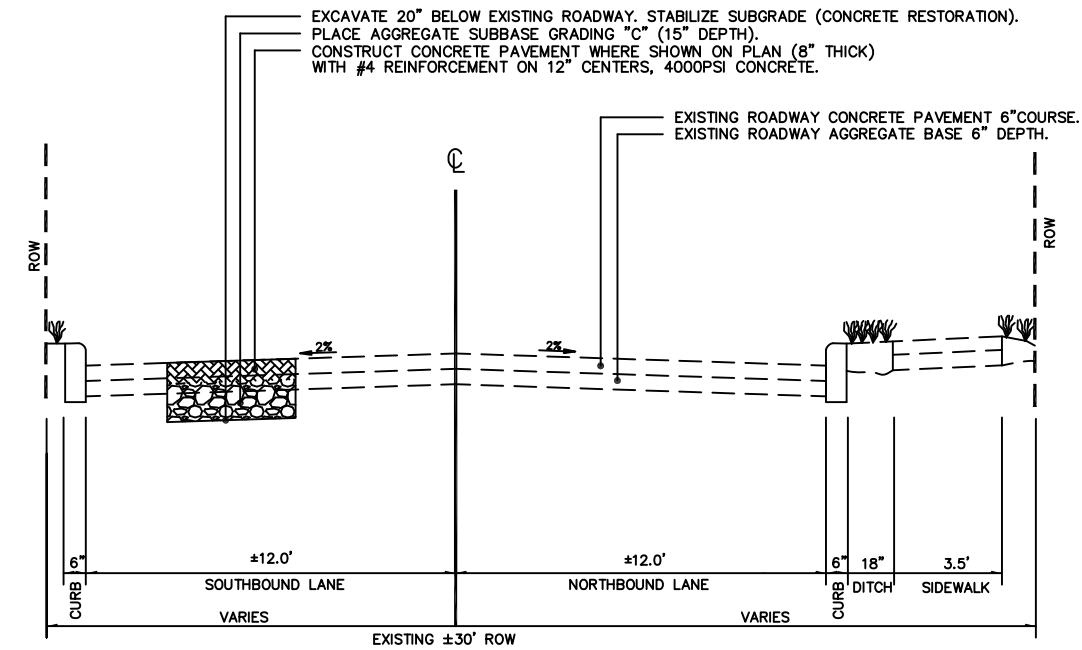
TYPICAL CROSS SECTION
 ROUTE 81

NOT TO SCALE

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	C5	97



9 ROUTE 81 TYPICAL SECTION RESTORATION CONCRETE PAVEMENT
STA.83+40 TO 84+15



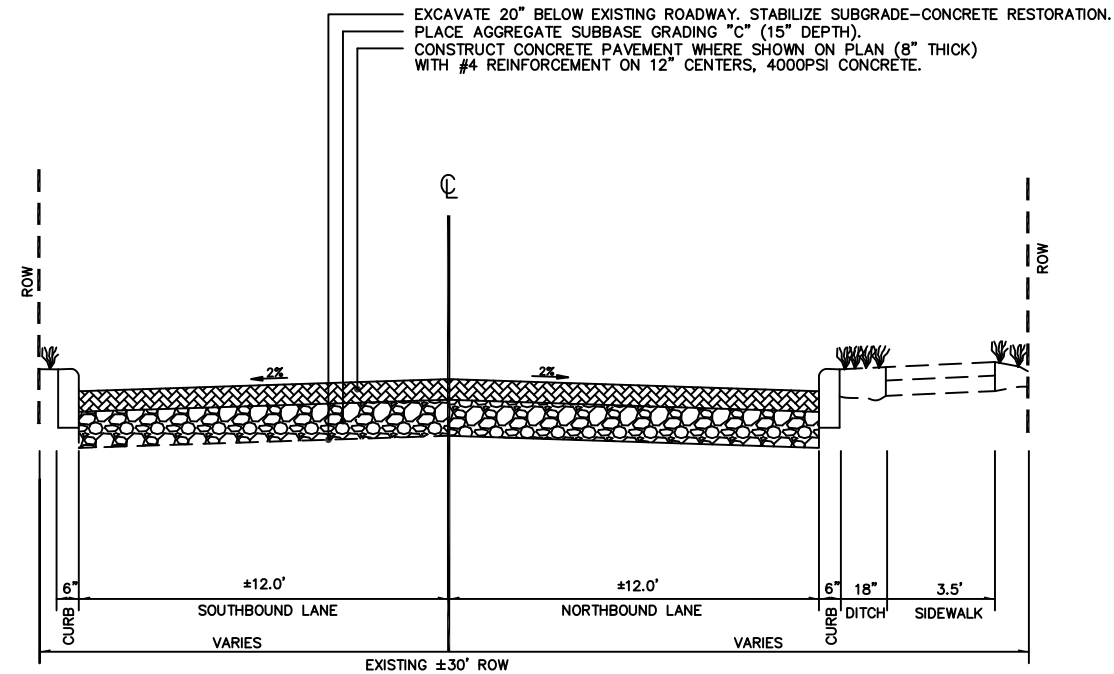
10 ROUTE 81 TYPICAL SECTION RESTORATION CONCRETE PATCHING
STA. 88+95 TO 89+10//89+40 TO 95+45//95+85 TO 96+32//96+65 TO 98+00

NOT TO SCALE

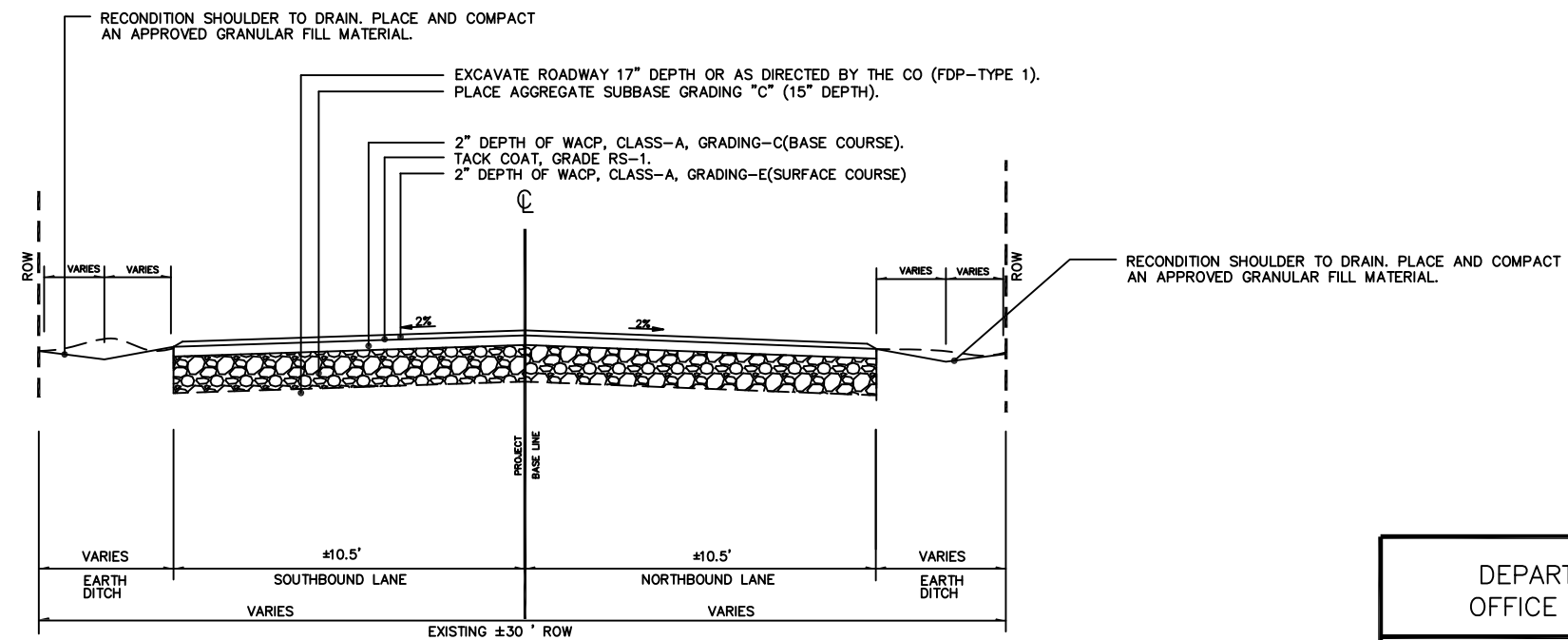
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TYPICAL CROSS SECTION
ROUTE 81

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	C6	97



11 ROUTE 81 TYPICAL SECTION RESTORATION CONCRETE PAVEMENT
STA. 89+10 TO 89+40//95+45 TO 95+85//96+35//96+65

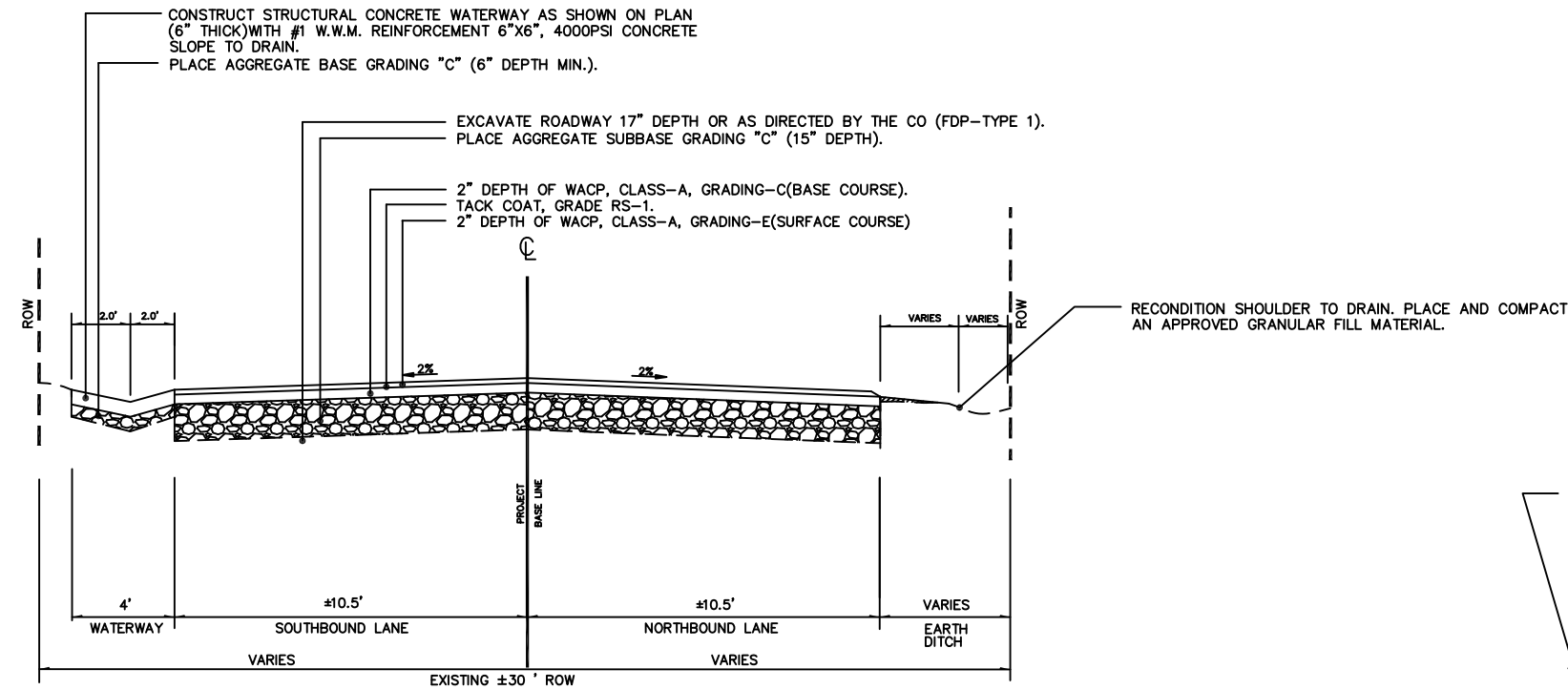


12 ROUTE 81 TYPICAL SECTION FULL DEPTH RECONSTRUCTION (FDP-1)
STA. 102+00 TO 105+50//115+80 TO 117+80//121+60 TO 123+15//129+75 TO 131+90

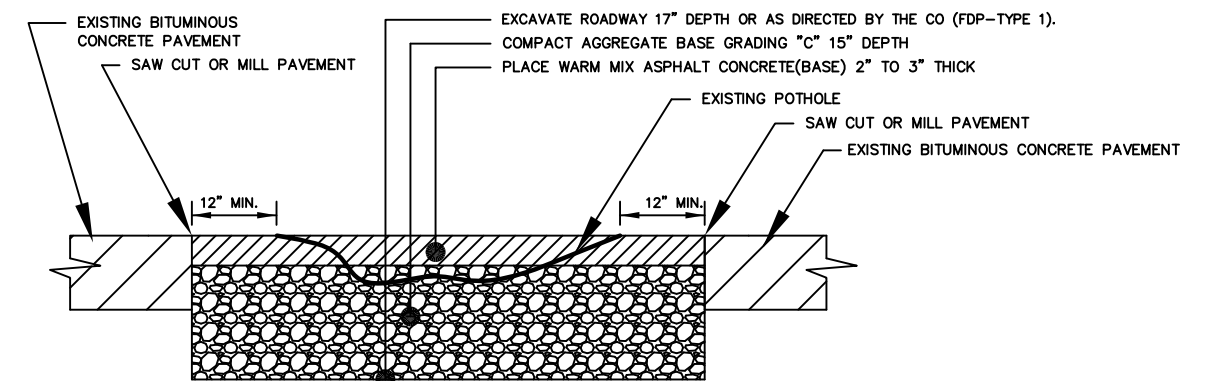
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TYPICAL CROSS SECTION
ROUTE 81

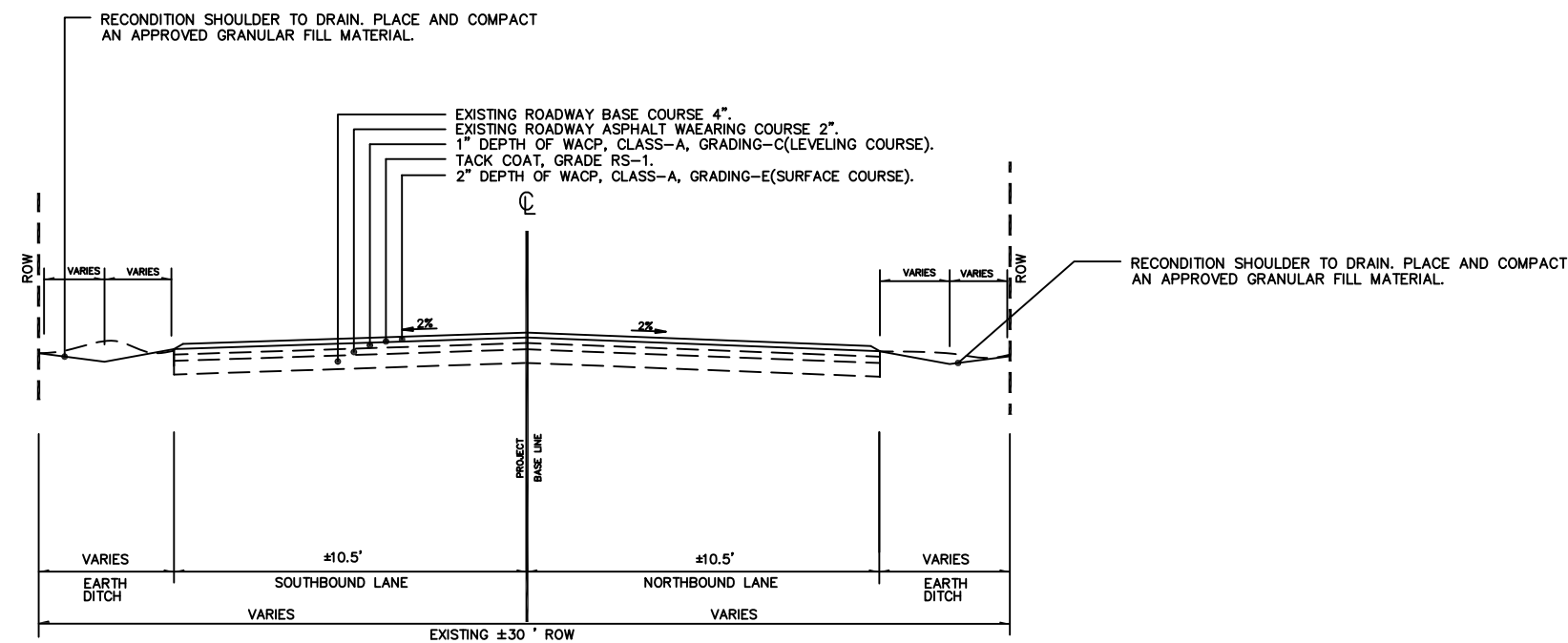
REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	C7	97



13 ROUTE 81 TYPICAL SECTION FULL DEPTH RECONSTRUCTION (FDP-1)
STA. 105+50 TO 113+00



15 ROUTE 81 TYPICAL SECTION FULL DEPTH PATCH (FDP-1)
REFER TO 41801 FDP-TYPE 1 OF FP14



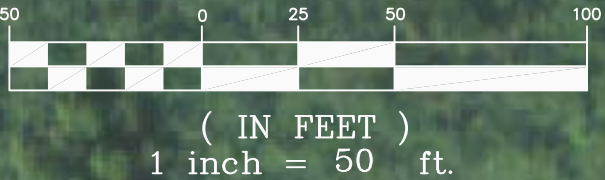
14 ROUTE 81 TYPICAL SECTION RECONDITIONING ROADWAY OVERLAY
STA. 113+00 TO 115+80//117+90 TO 121+60//123+15 TO 129+75

NOT TO SCALE

DEPARTMENT OF PUBLIC WORKS
OFFICE OF HIGHWAY ENGINEERING

TYPICAL CROSS SECTION
ROUTE 81

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	D1	97



DEPARTMENT OF PUBLIC WORKS
OFFICE OF HIGHWAY ENGINEERING

ROUTE 81
PLAN
STA 00+00 TO 04+00

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	D2	97



ITEM 63301(B) — REMOVE/REPLACE NEW PERMANENT SIGN.

ITEM 50101 — CONSTRUCT STRUCTURAL CONCRETE WATERWAY,
8" THICK WITH #4 REINF., 4000PSI, SLOPE TO DRAIN
ONSTRUCT INVERT OF THE WATERWAY TO 2.2'

ITEM 25101 — GROUTED RIP RAP,

ITEM 60401(D) — ADJUST MA

- ITEM 20101 — CLEARING AND GRUBBING.
- ITEM 40301(A) — WARM ASPHALT CONCRETE PAVEMENT(1" SURFACE COURSE),
CLASS "A" ,GRADING "E", TYPE IV SMOOTH, WITH ANTISTRIIP ADDITIVE.
- ITEM 41202 — TACK COAT, GRADING RS-1.
- ITEM 63401(B) — THERMOPLASTIC PAVEMENT MARKINGS TYPE H, 4" WHITE.
- ITEM 63401(A) — THERMOPLASTIC PAVEMENT MARKINGS TYPE H, 4" YELLOW.

ITEM 61501 — CONSTRUCT CONCRETE SIDEWALK.
ITEM 60901(A) — CONSTRUCT CONCRETE CURB AND GUTTER.

ITEM 60401(D) — ADJUST MANHOLE.

ITEM 63301(A) — INSTALL NEW PERMANENT SIGN.

ITEM 61701(A) — INSTALL GUARDRAIL CRASH CUSION,
WITH REFLECTORS.

DEPARTMENT OF PUBLIC WORKS
OFFICE OF HIGHWAY ENGINEERING

ROUTE 81
PLAN
STA 04+00 TO 10+00

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	D3	97



DEPARTMENT OF PUBLIC WORKS
OFFICE OF HIGHWAY ENGINEERING

ROUTE 81
PLAN
STA 10+00 TO 16+00

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	D4	97



ITEM 60801 – CONSTRUCT PAVED CONCRETE WATERWAY, 6” THICK WITH #1 W.W.M.(4’ WIDTH), 4000PSI, SLOPE TO DRAIN. CONSTRUCT INVERT OF THE WATERWAY AT 4½” DEPTH.

ITEM 63301(B) – REMOVE/REPLACE NEW PERMANENT SIGN.

RELOCATE WAPA/INNOVATIVE UTILITY POLE.

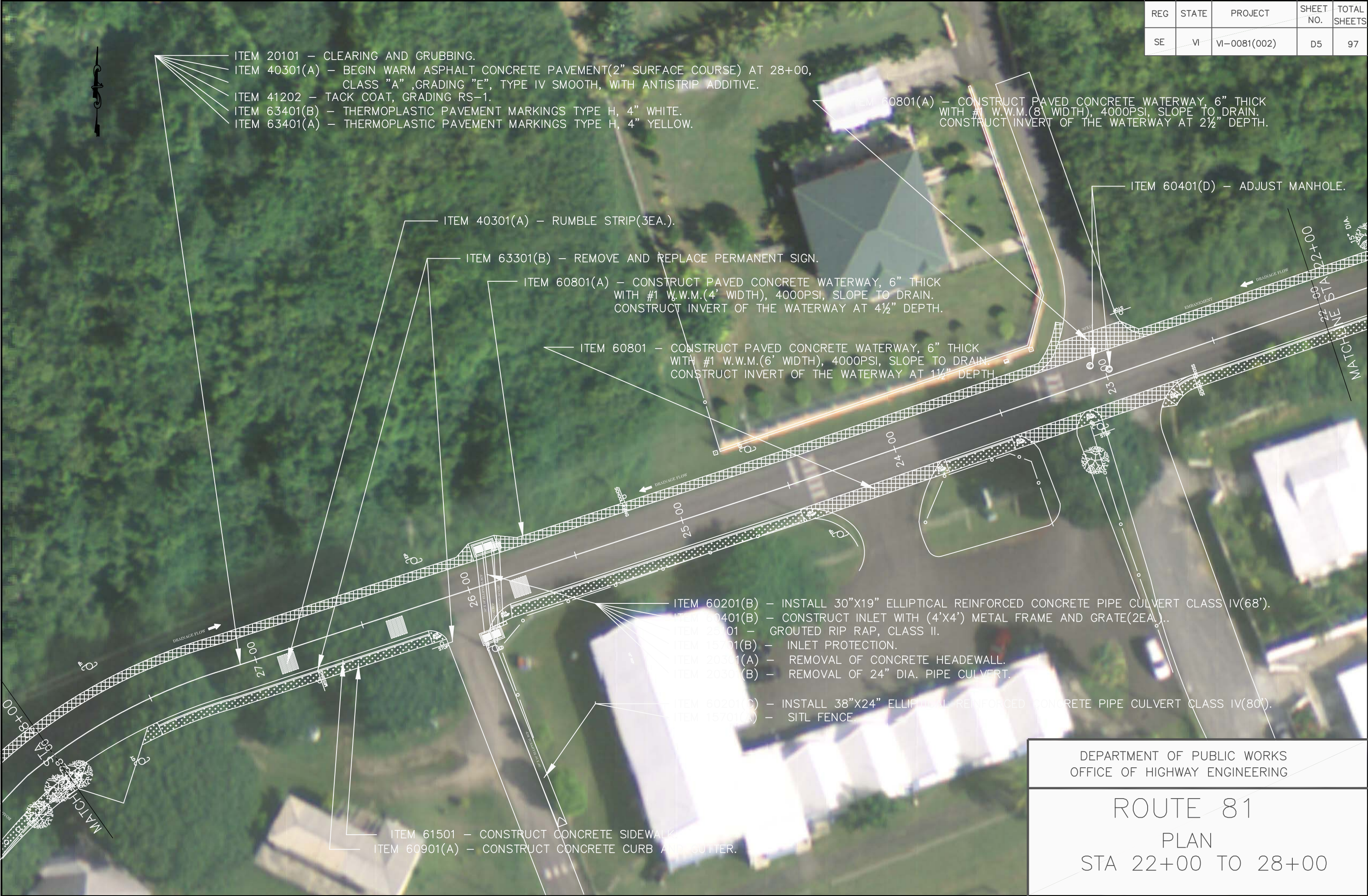
ITEM 61501 – CONSTRUCT CONCRETE SIDEWALK.
ITEM 60901(A) – CONSTRUCT CONCRETE CURB AND GUTTER.

- ITEM 20101 – CLEARING AND GRUBBING.
- ITEM 40301(A) – WARM ASPHALT CONCRETE PAVEMENT(1” SURFACE COURSE), CLASS “A” ,GRADING “E”, TYPE IV SMOOTH, WITH ANTISTRIIP ADDITIVE.
- ITEM 41202 – TACK COAT, GRADING RS-1.
- ITEM 63401(B) – THERMOPLASTIC PAVEMENT MARKINGS TYPE H, 4” WHITE.
- ITEM 63401(A) – THERMOPLASTIC PAVEMENT MARKINGS TYPE H, 4” YELLOW.

DEPARTMENT OF PUBLIC WORKS
OFFICE OF HIGHWAY ENGINEERING

ROUTE 81
PLAN
STA 16+00 TO 22+00

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	D5	97



- ITEM 20101 — CLEARING AND GRUBBING.
- ITEM 40301(A) — BEGIN WARM ASPHALT CONCRETE PAVEMENT(2" SURFACE COURSE) AT 28+00, CLASS "A", GRADING "E", TYPE IV SMOOTH, WITH ANTISTrip ADDITIVE.
- ITEM 41202 — TACK COAT, GRADING RS-1.
- ITEM 63401(B) — THERMOPLASTIC PAVEMENT MARKINGS TYPE H, 4" WHITE.
- ITEM 63401(A) — THERMOPLASTIC PAVEMENT MARKINGS TYPE H, 4" YELLOW.

ITEM 60801(A) — CONSTRUCT PAVED CONCRETE WATERWAY, 6" THICK WITH #1 W.W.M.(8' WIDTH), 4000PSI, SLOPE TO DRAIN. CONSTRUCT INVERT OF THE WATERWAY AT 2½" DEPTH.

ITEM 60401(D) — ADJUST MANHOLE.

ITEM 40301(A) — RUMBLE STRIP(3EA.).

ITEM 63301(B) — REMOVE AND REPLACE PERMANENT SIGN.

ITEM 60801(A) — CONSTRUCT PAVED CONCRETE WATERWAY, 6" THICK WITH #1 W.W.M.(4' WIDTH), 4000PSI, SLOPE TO DRAIN. CONSTRUCT INVERT OF THE WATERWAY AT 4½" DEPTH.

ITEM 60801 — CONSTRUCT PAVED CONCRETE WATERWAY, 6" THICK WITH #1 W.W.M.(6' WIDTH), 4000PSI, SLOPE TO DRAIN. CONSTRUCT INVERT OF THE WATERWAY AT 1½" DEPTH.

- ITEM 60201(B) — INSTALL 30"x19" ELLIPTICAL REINFORCED CONCRETE PIPE CULVERT CLASS IV(68').
- ITEM 60401(B) — CONSTRUCT INLET WITH (4'x4') METAL FRAME AND GRATE(2EA.)..
- ITEM 20101 — GROUTED RIP RAP, CLASS II.
- ITEM 15701(B) — INLET PROTECTION.
- ITEM 20301(A) — REMOVAL OF CONCRETE HEADEWALL.
- ITEM 20301(B) — REMOVAL OF 24" DIA. PIPE CULVERT.

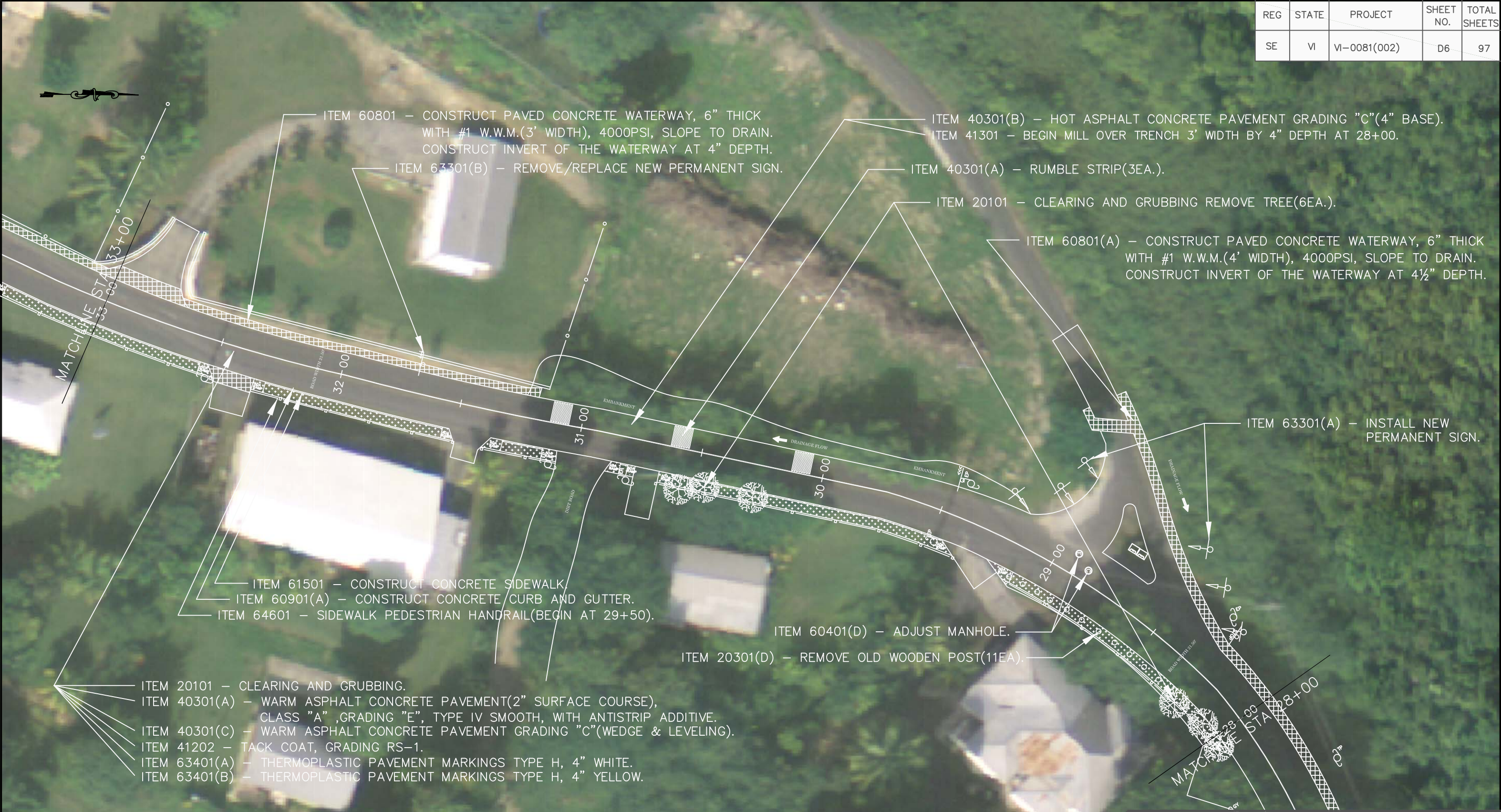
- ITEM 60201(C) — INSTALL 38"x24" ELLIPTICAL REINFORCED CONCRETE PIPE CULVERT CLASS IV(80').
- ITEM 15701(A) — SITL FENCE.

- ITEM 61501 — CONSTRUCT CONCRETE SIDEWALK.
- ITEM 60901(A) — CONSTRUCT CONCRETE CURB AND GUTTER.

DEPARTMENT OF PUBLIC WORKS
OFFICE OF HIGHWAY ENGINEERING

ROUTE 81
PLAN
STA 22+00 TO 28+00

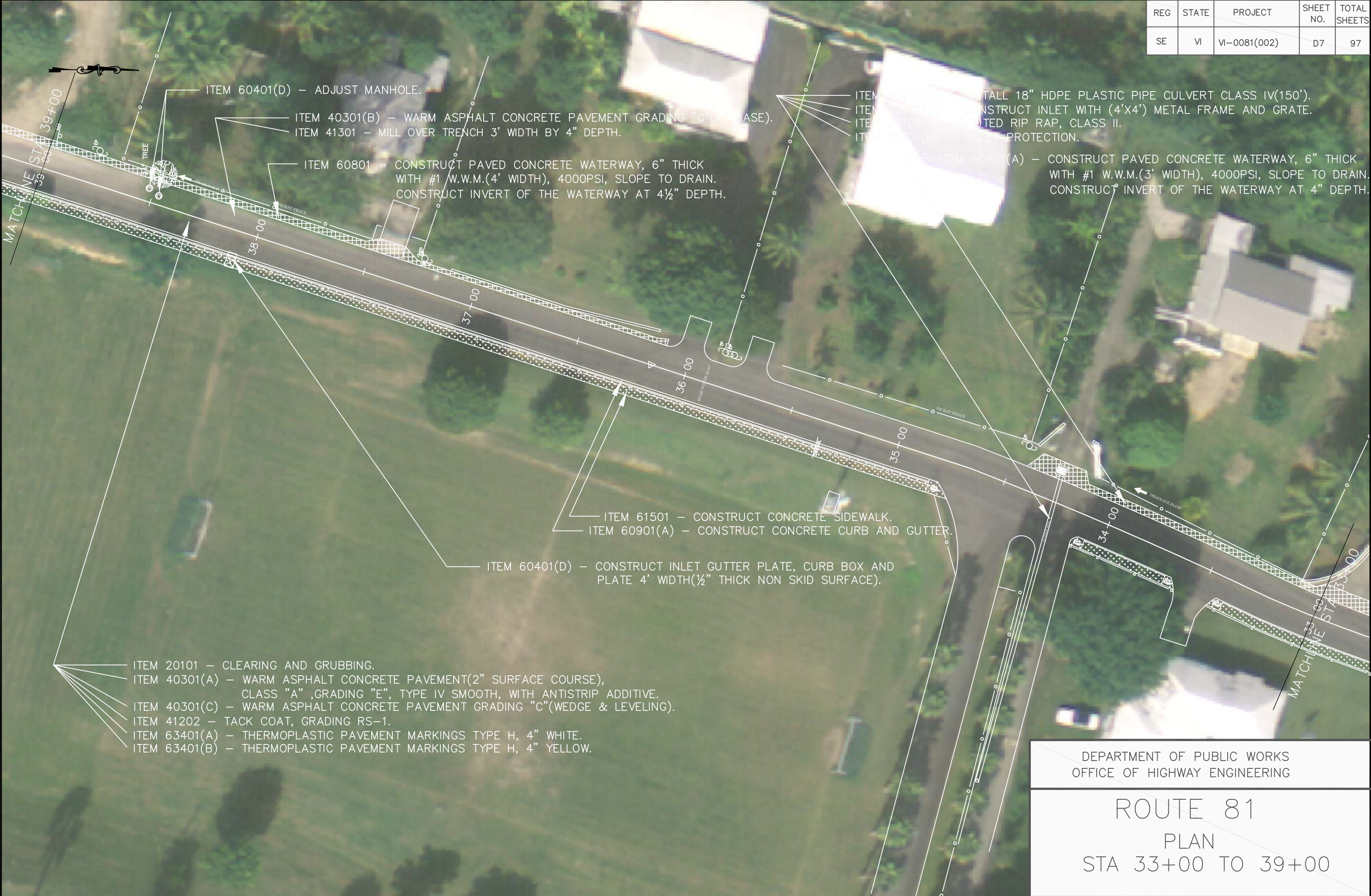
REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	D6	97



DEPARTMENT OF PUBLIC WORKS
OFFICE OF HIGHWAY ENGINEERING

ROUTE 81
PLAN
STA 28+00 TO 33+00

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	D7	97



ITEM 60401(D) — ADJUST MANHOLE.

ITEM 40301(B) — WARM ASPHALT CONCRETE PAVEMENT GRADING "C" (4" BASE).
ITEM 41301 — MILL OVER TRENCH 3' WIDTH BY 4" DEPTH.

ITEM 60801 — CONSTRUCT PAVED CONCRETE WATERWAY, 6" THICK WITH #1 W.W.M.(4' WIDTH), 4000PSI, SLOPE TO DRAIN. CONSTRUCT INVERT OF THE WATERWAY AT 4½" DEPTH.

ITEM 60201(B) — INSTALL 18" HDPE PLASTIC PIPE CULVERT CLASS IV(150').
ITEM 60401(B) — CONSTRUCT INLET WITH (4'X4') METAL FRAME AND GRATE.
ITEM 22101 — ARCOURED RIP RAP, CLASS II.
ITEM 15701(B) — INLET PROTECTION.

ITEM 60801(A) — CONSTRUCT PAVED CONCRETE WATERWAY, 6" THICK WITH #1 W.W.M.(3' WIDTH), 4000PSI, SLOPE TO DRAIN. CONSTRUCT INVERT OF THE WATERWAY AT 4" DEPTH.

ITEM 61501 — CONSTRUCT CONCRETE SIDEWALK.
ITEM 60901(A) — CONSTRUCT CONCRETE CURB AND GUTTER.

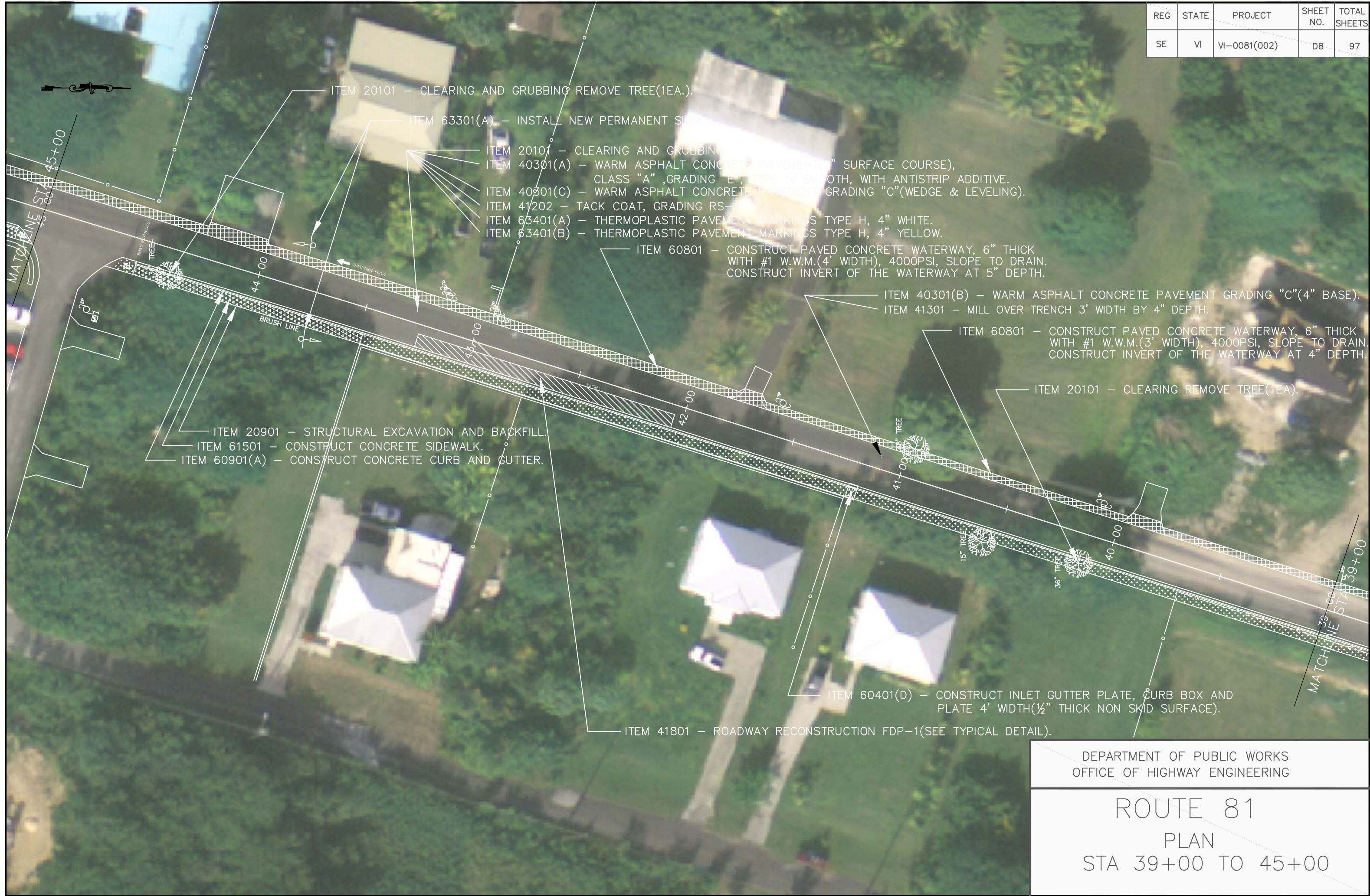
ITEM 60401(D) — CONSTRUCT INLET GUTTER PLATE, CURB BOX AND PLATE 4' WIDTH(½" THICK NON SKID SURFACE).

ITEM 20101 — CLEARING AND GRUBBING.
ITEM 40301(A) — WARM ASPHALT CONCRETE PAVEMENT(2" SURFACE COURSE), CLASS "A" ,GRADING "E", TYPE IV SMOOTH, WITH ANTISTRIIP ADDITIVE.
ITEM 40301(C) — WARM ASPHALT CONCRETE PAVEMENT GRADING "C"(WEDGE & LEVELING).
ITEM 41202 — TACK COAT, GRADING RS-1.
ITEM 63401(A) — THERMOPLASTIC PAVEMENT MARKINGS TYPE H, 4" WHITE.
ITEM 63401(B) — THERMOPLASTIC PAVEMENT MARKINGS TYPE H, 4" YELLOW.

DEPARTMENT OF PUBLIC WORKS
OFFICE OF HIGHWAY ENGINEERING

ROUTE 81
PLAN
STA 33+00 TO 39+00

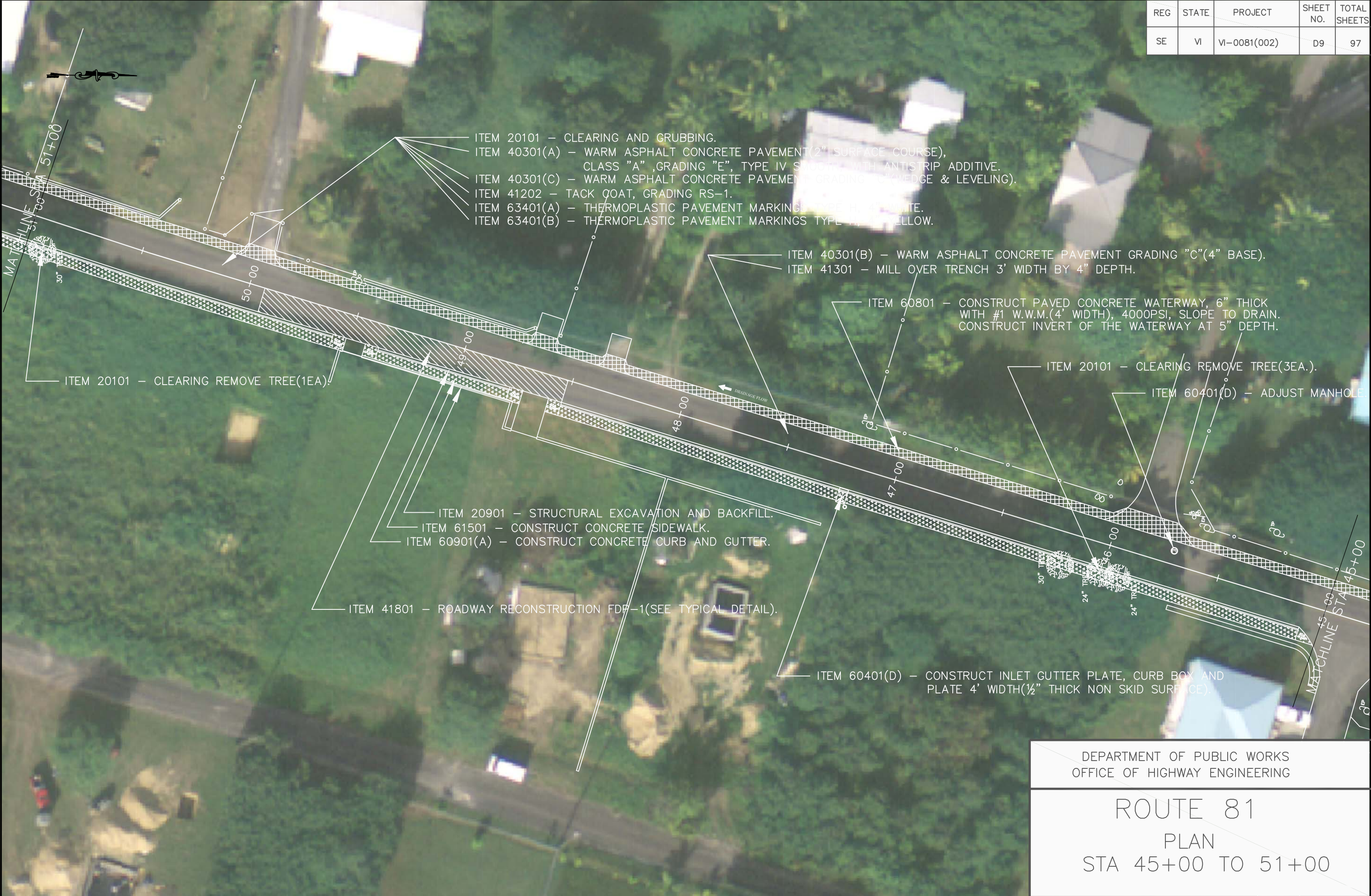
REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	D8	97



DEPARTMENT OF PUBLIC WORKS
OFFICE OF HIGHWAY ENGINEERING

ROUTE 81
PLAN
STA 39+00 TO 45+00

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	D9	97



REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	D10	97



ITEM 40301(B) – WARM ASPHALT CONCRETE PAVEMENT GRADING "C"(4" BASE).
ITEM 41301 – MILL OVER TRENCH 3' WIDTH BY 4" DEPTH.
ITEM 63301(C) – REMOVE AND RESET PERMANENT SIGN.
ITEM 60201(B) – INSTALL 30"x19" ELLIPTICAL REINFORCED CONCRETE PIPE CULVERT CLASS IV(42').
ITEM 60401(B) – CONSTRUCT INLET WITH (4'x4') METAL FRAME AND GRATE(2EA.).
ITEM 25101 – GROUTED RIP RAP, CLASS II.
ITEM 15701(B) – INLET PROTECTION.

ITEM 60801 – CONSTRUCT PAVED CONCRETE WATERWAY, 6" THICK WITH #1 W.W.M.(4' WIDTH), 4000PSI, SLOPE TO DRAIN. CONSTRUCT INVERT OF THE WATERWAY AT 4½" DEPTH.

ITEM 20101(A) – REMOVE TREE STUMP.

ITEM 60401(D) – ADJUST MANHOLE.

ITEM 20101 – CLEARING REMOVE TREE STUMP.

ITEM 20101 – CLEARING REMOVE TREE (3EA.).

ITEM 20901 – STRUCTURAL EXCAVATION AND BACKFILL.

ITEM 61501 – CONSTRUCT CONCRETE SIDEWALK.

ITEM 60901(A) – CONSTRUCT CONCRETE CURB AND GUTTER.

ITEM 63301(B) – REMOVE/REPLACE NEW PERMANENT SIGN.

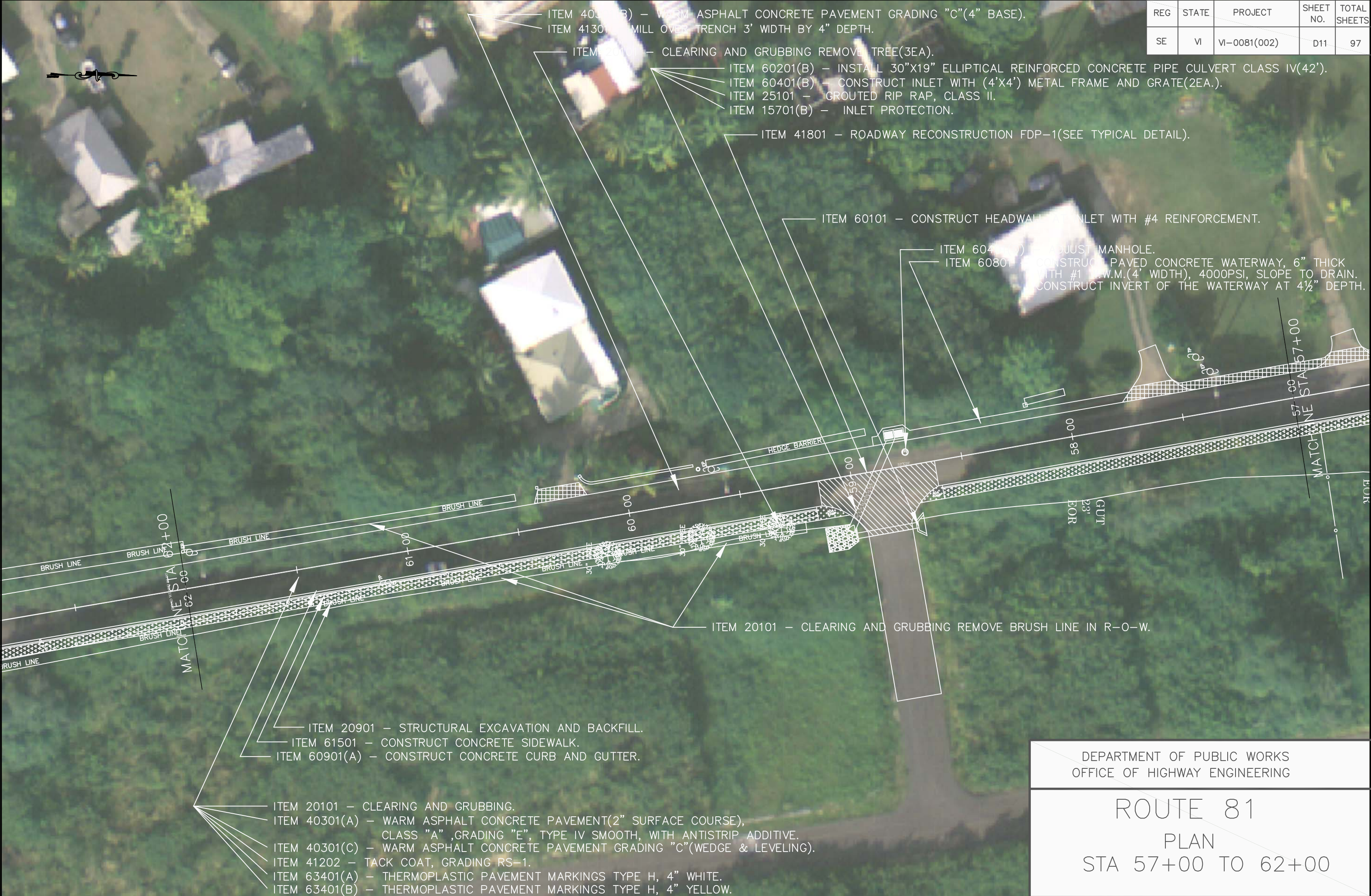
ITEM 60401(D) – CONSTRUCT INLET GUTTER PLATE, CURB BOX AND PLATE 4' WIDTH(½" THICK NON SKID SURFACE).

ITEM 20101 – CLEARING AND GRUBBING.
ITEM 40301(A) – WARM ASPHALT CONCRETE PAVEMENT(2" SURFACE COURSE), CLASS "A", GRADING "E", TYPE IV SMOOTH, WITH ANTISTRIIP ADDITIVE.
ITEM 40301(C) – WARM ASPHALT CONCRETE PAVEMENT GRADING "C"(WEDGE & LEVELING).
ITEM 41202 – TACK COAT, GRADING RS-1.
ITEM 63401(A) – THERMOPLASTIC PAVEMENT MARKINGS TYPE H, 4" WHITE.
ITEM 63401(B) – THERMOPLASTIC PAVEMENT MARKINGS TYPE H, 4" YELLOW.

DEPARTMENT OF PUBLIC WORKS
OFFICE OF HIGHWAY ENGINEERING

ROUTE 81
PLAN
STA 51+00 TO 57+00

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	D11	97



DEPARTMENT OF PUBLIC WORKS
OFFICE OF HIGHWAY ENGINEERING

ROUTE 81
PLAN
STA 57+00 TO 62+00

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	D13	97

ITEM 63301(B) – REMOVE/REPLACE NEW PERMANENT SIGN.

- ITEM 20101 – CLEARING AND GRUBBING.
- ITEM 40301(A) – WARM ASPHALT CONCRETE PAVEMENT(2" SURFACE COURSE), CLASS "A", GRADING "E", TYPE IV SMOOTH, WITH ANTISTRIIP ADDITIVE.
- ITEM 40301(C) – WARM ASPHALT CONCRETE PAVEMENT GRADING "C"(WEDGE & LEVELING).
- ITEM 41202 – TACK COAT, GRADING RS-1.
- ITEM 63401(A) – THERMOPLASTIC PAVEMENT MARKINGS TYPE H, 4" WHITE.
- ITEM 63401(B) – THERMOPLASTIC PAVEMENT MARKINGS TYPE H, 4" YELLOW.
- ITEM 30301 – ROAD RECONDITIONING SHAPE SHOULDER TO DRAIN.
- ITEM 60401(D) – CONSTRUCT INLET GUTTER PLATE, CURB BOX AND PLATE 4' WIDTH($\frac{1}{2}$ " THICK NON SKID SURFACE).

- ITEM 20901 – STRUCTURAL EXCAVATION AND BACKFILL.
- ITEM 61501 – CONSTRUCT CONCRETE SIDEWALK.
- ITEM 60901(A) – CONSTRUCT CONCRETE CURB AND GUTTER.
- ITEM 41801 – ROADWAY RECONSTRUCTION FDP-1(SEE TYPICAL DETAIL).

DEPARTMENT OF PUBLIC WORKS
OFFICE OF HIGHWAY ENGINEERING

ROUTE 81
PLAN
STA 67+00 TO 71+00

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	D14	97

- ITEM 20101 - CLEARING AND GRUBBING.
- ITEM 40301(A) - WARM ASPHALT CONCRETE PAVEMENT(2" SURFACE COURSE), CLASS "A", GRADING "E", TYPE IV SMOOTH, WITH ANTISTRIIP ADDITIVE.
- ITEM 40301(C) - WARM ASPHALT CONCRETE PAVEMENT GRADING "C"(WEDGE & LEVELING).
- ITEM 41202 - TACK COAT, GRADING RS-1.
- ITEM 63401(A) - THERMOPLASTIC PAVEMENT MARKINGS TYPE H, 4" WHITE.
- ITEM 63401(B) - THERMOPLASTIC PAVEMENT MARKINGS TYPE H, 4" YELLOW.

ITEM 30301 - ROAD RECONDITIONING SHAPE SHOULDER TO DRAIN.

ITEM 63301(B) - REMOVE/REPLACE NEW PERMANENT SIGN.

ITEM 41801 - ROADWAY RECONSTRUCTION FDP-1(SEE TYPICAL DETAIL).

ITEM 20901 - STRUCTURAL EXCAVATION AND BACKFILL.

ITEM 61501 - CONSTRUCT CONCRETE SIDEWALK.

ITEM 60901(A) - CONSTRUCT CONCRETE CURB AND GUTTER.

ITEM 60401(D) - CONSTRUCT INLET GUTTER PLATE, CURB BOX AND PLATE 4' WIDTH(1/2" THICK NON SKID SURFACE).

ITEM 60201(B) - INSTALL 30"x19" ELLIPTICAL REINFORCED CONCRETE PIPE CULVERT CLASS IV(40').

ITEM 60101 - CONSTRUCT HEADWALL AT INLET WITH #4 REINFORCEMENT.

ITEM 25101 - GROUTED RIP RAP, CLASS II.

ITEM 15701(B) - INLET PROTECTION.

DEPARTMENT OF PUBLIC WORKS
OFFICE OF HIGHWAY ENGINEERING

ROUTE 81
PLAN
STA 71+00 TO 75+50

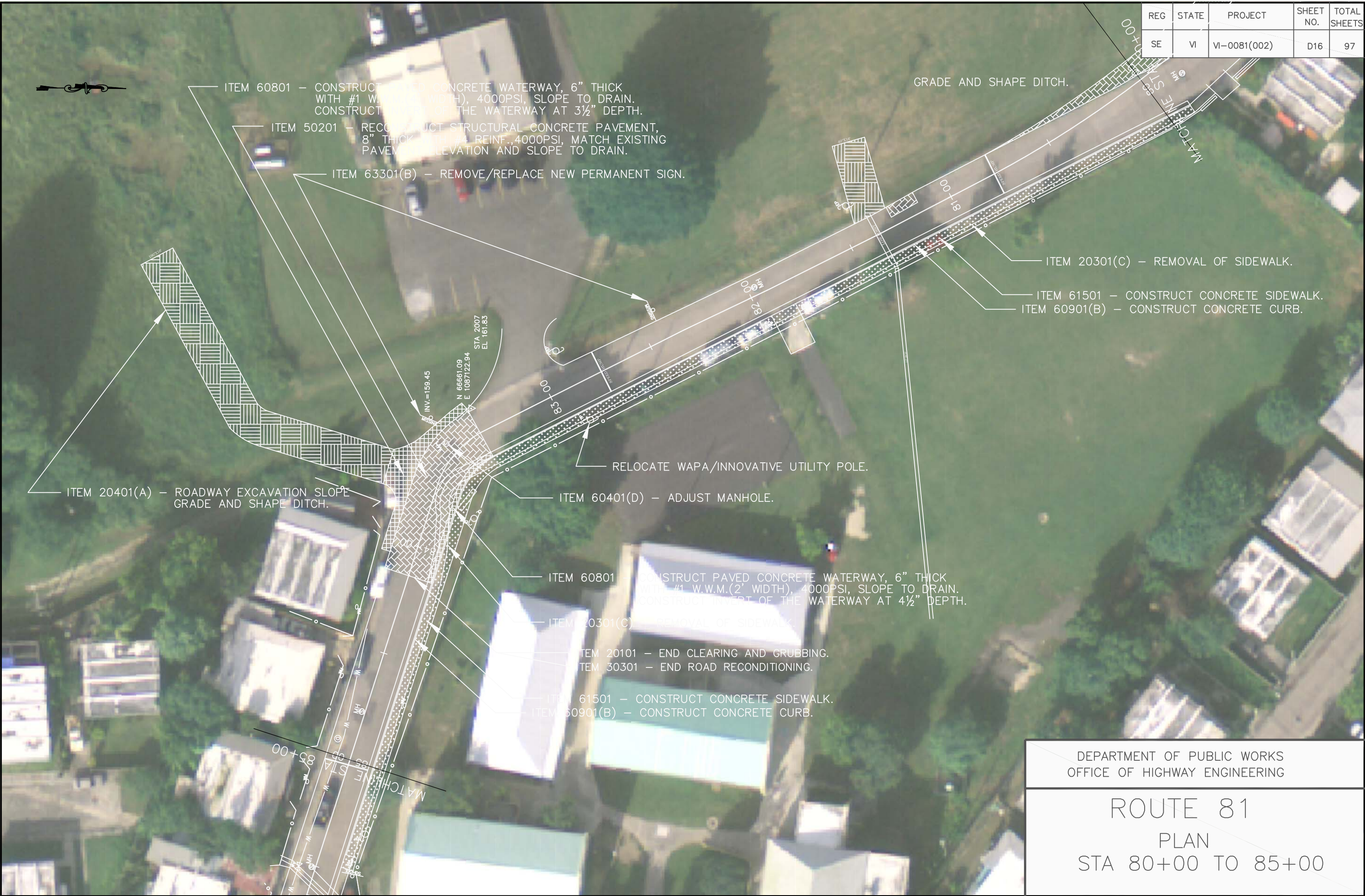
REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	D15	97



DEPARTMENT OF PUBLIC WORKS
OFFICE OF HIGHWAY ENGINEERING

ROUTE 81
PLAN
STA 75+50 TO 80+00

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	D16	97



ITEM 60801 — CONSTRUCT PAVED CONCRETE WATERWAY, 6" THICK WITH #1 W.W.M.(2' WIDTH), 4000PSI, SLOPE TO DRAIN. CONSTRUCT INVERT OF THE WATERWAY AT 3½" DEPTH.

ITEM 50201 — RECONSTRUCT STRUCTURAL CONCRETE PAVEMENT, 8" THICK WITH #4 REINF.,4000PSI, MATCH EXISTING PAVEMENT ELEVATION AND SLOPE TO DRAIN.

ITEM 63301(B) — REMOVE/REPLACE NEW PERMANENT SIGN.

GRADE AND SHAPE DITCH.

ITEM 20301(C) — REMOVAL OF SIDEWALK.

ITEM 61501 — CONSTRUCT CONCRETE SIDEWALK.
ITEM 60901(B) — CONSTRUCT CONCRETE CURB.

ITEM 20401(A) — ROADWAY EXCAVATION SLOPE GRADE AND SHAPE DITCH.

RELOCATE WAPA/INNOVATIVE UTILITY POLE.

ITEM 60401(D) — ADJUST MANHOLE.

ITEM 60801 — CONSTRUCT PAVED CONCRETE WATERWAY, 6" THICK WITH #1 W.W.M.(2' WIDTH), 4000PSI, SLOPE TO DRAIN. CONSTRUCT INVERT OF THE WATERWAY AT 4½" DEPTH.

ITEM 20301(C) — REMOVAL OF SIDEWALK.

ITEM 20101 — END CLEARING AND GRUBBING.
ITEM 30301 — END ROAD RECONDITIONING.

ITEM 61501 — CONSTRUCT CONCRETE SIDEWALK.
ITEM 60901(B) — CONSTRUCT CONCRETE CURB.

DEPARTMENT OF PUBLIC WORKS
OFFICE OF HIGHWAY ENGINEERING

ROUTE 81
PLAN
STA 80+00 TO 85+00

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	D17	97



DEPARTMENT OF PUBLIC WORKS
OFFICE OF HIGHWAY ENGINEERING

ROUTE 81
PLAN
STA 85+00 TO 91+00

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	D18	97



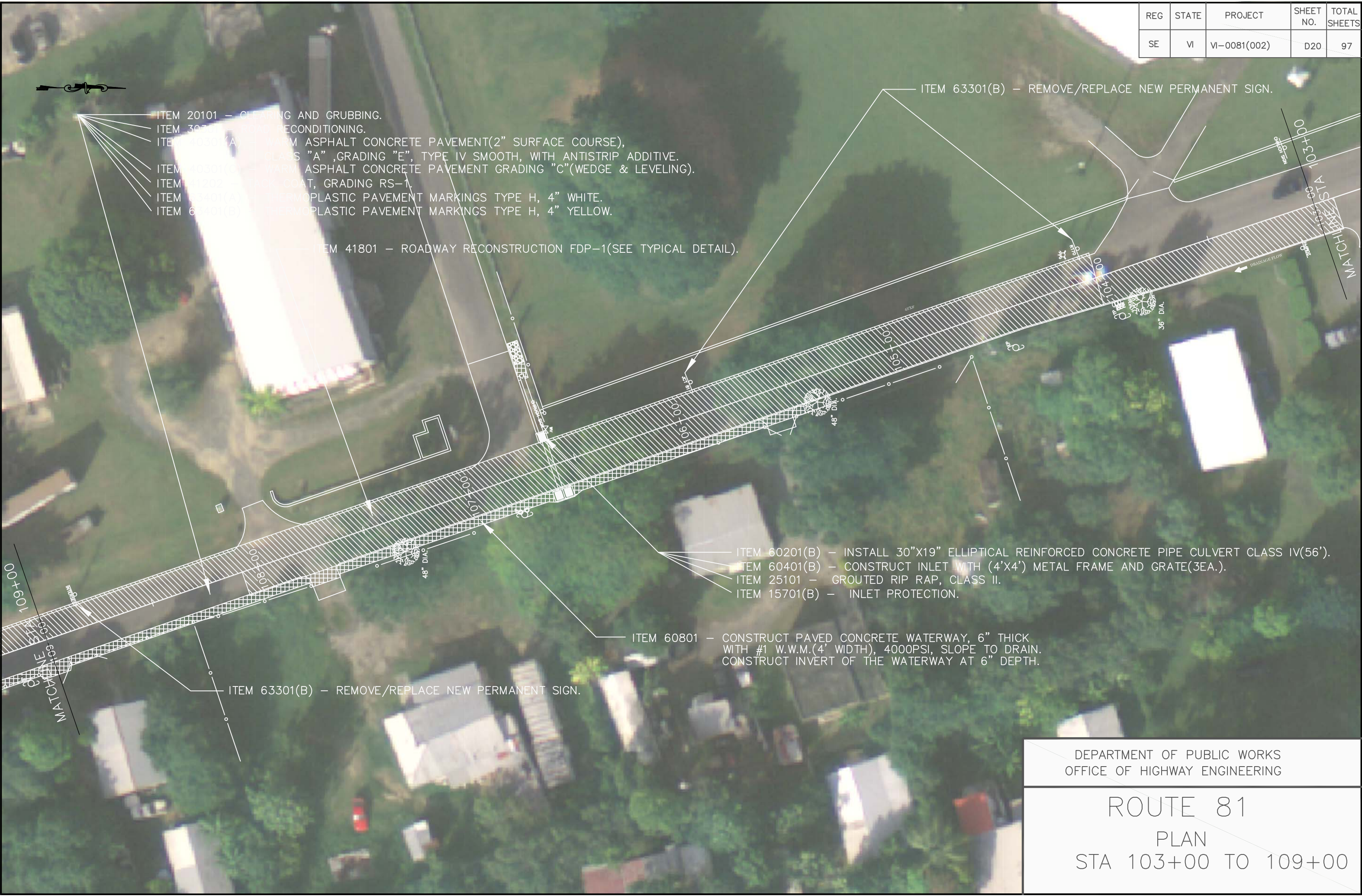
DEPARTMENT OF PUBLIC WORKS
OFFICE OF HIGHWAY ENGINEERING

ROUTE 81
PLAN
STA 91+00 TO 97+00

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	D19	97



REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	D20	97



DEPARTMENT OF PUBLIC WORKS
OFFICE OF HIGHWAY ENGINEERING

ROUTE 81
PLAN
STA 103+00 TO 109+00

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	D21	97

- ITEM 20101 - END CLEARING AND GRUBBING.
- ITEM 30301 - ROAD RECONDITIONING.
- ITEM 40301(A) - WARM ASPHALT CONCRETE PAVEMENT(2" SURFACE COURSE), CLASS "A", GRADING "E", TYPE IV SMOOTH, WITH ANTISTRIIP ADDITIVE.
- ITEM 40301(C) - WARM ASPHALT CONCRETE PAVEMENT GRADING "C"(WEDGE & LEVELING).
- ITEM 41202 - TACK COAT, GRADING RS-1.
- ITEM 63401(A) - THERMOPLASTIC PAVEMENT MARKINGS TYPE H, 4" WHITE.
- ITEM 63401(B) - THERMOPLASTIC PAVEMENT MARKINGS TYPE H, 4" YELLOW.

ITEM 41801 - ROADWAY RECONSTRUCTION FDP-1(SEE TYPICAL).

ITEM 60801 - CONSTRUCT PAVED CONCRETE WATERWAY, 6" THICK WITH #1 W.W.M.(4' WIDTH), 4000PSI, SLOPE TO DRAIN. CONSTRUCT INVERT OF THE WATERWAY AT 6" DEPTH.

DEPARTMENT OF PUBLIC WORKS
OFFICE OF HIGHWAY ENGINEERING

ROUTE 81
PLAN
STA 109+00 TO 115+00

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	D22	97

- ITEM 30301 – ROAD RECONDITIONING.
ITEM 40301(A) – WARM ASPHALT CONCRETE PAVEMENT(2" SURFACE COURSE),
CLASS "A" ,GRADING "E", TYPE IV SMOOTH, WITH ANTISTRIIP ADDITIVE.
ITEM 40301(C) – WARM ASPHALT CONCRETE PAVEMENT GRADING "C"(WEDGE & LEVELING).
ITEM 41202 – TACK COAT, GRADING RS-1.
ITEM 63401(A) – THERMOPLASTIC PAVEMENT MARKINGS TYPE H, 4" WHITE.
ITEM 63401(B) – THERMOPLASTIC PAVEMENT MARKINGS TYPE H, 4" YELLOW.

- ITEM 63301(B) – REMOVE/REPLACE NEW PERMANENT SIGN .
ITEM 41801 – ROADWAY RECONSTRUCTION FDP-1(SEE TYPICAL DETAIL).

- ITEM 60801 – CONSTRUCT PAVED CONCRETE WATERWAY, 3' THICK
WITH #1 W.W.M.(4' WIDTH), 4000PSI, SLOPE TO DRAIN.
CONSTRUCT INVERT OF THE WATERWAY AT 4" DEPTH.

DEPARTMENT OF PUBLIC WORKS
OFFICE OF HIGHWAY ENGINEERING

ROUTE 81
PLAN
STA 115+00 TO 121+00

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	D23	97

- ITEM 20101 - CLEARING AND GRUBBING.
ITEM 30301 - ROAD RECONDITIONING.
ITEM 40301(A) - WARM ASPHALT CONCRETE PAVEMENT(2" SURFACE COURSE),
CLASS "A", GRADING "E", TYPE IV SMOOTH, WITH ANTISTRIP ADDITIVE.
ITEM 40301(C) - WARM ASPHALT CONCRETE PAVEMENT GRADING "C"(WEDGE & LEVELING).
ITEM 41202 - TACK COAT, GRADING RS-1.
ITEM 63401(A) - THERMOPLASTIC PAVEMENT MARKINGS TYPE H, 4" WHITE.
ITEM 63401(B) - THERMOPLASTIC PAVEMENT MARKINGS TYPE H, 4" YELLOW.

ITEM 20101 - REMOVE STUMP.

ITEM 60801 - CONSTRUCT PAVED CONCRETE WATERWAY, 6" THICK WITH #1 W.W.M.(4' WIDTH), 4000PSI, SLOPE TO DRAIN. CONSTRUCT INVERT OF THE WATERWAY AT 6" DEPTH.

ITEM 41801 - ROADWAY RECONSTRUCTION FDP-1(SEE TYPICAL DETAIL).

- ITEM 60201(B) - INSTALL 30"x19" ELLIPTICAL REINFORCED CONCRETE PIPE CULVERT CLASS IV(56').
ITEM 60401(B) - CONSTRUCT INLET WITH (4'X4') METAL FRAME AND GRATE(2EA.).
ITEM 25101 - GROUTED RIP RAP, CLASS II.
ITEM 15701(B) - INLET PROTECTION.

DEPARTMENT OF PUBLIC WORKS
OFFICE OF HIGHWAY ENGINEERING

ROUTE 81
PLAN
STA 121+00 TO 127+00

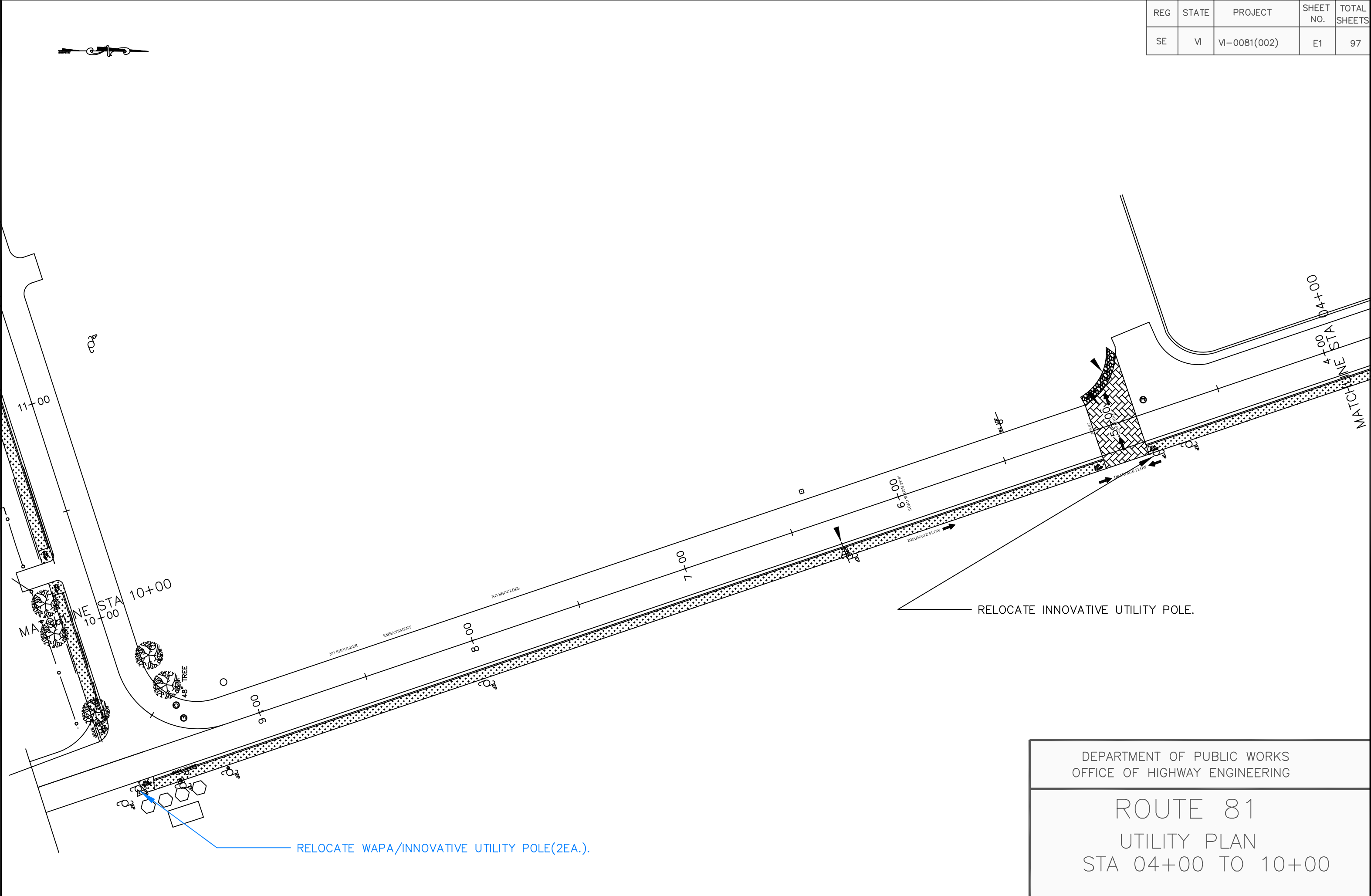
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SE	VI	VI-0081(002)	D24	97



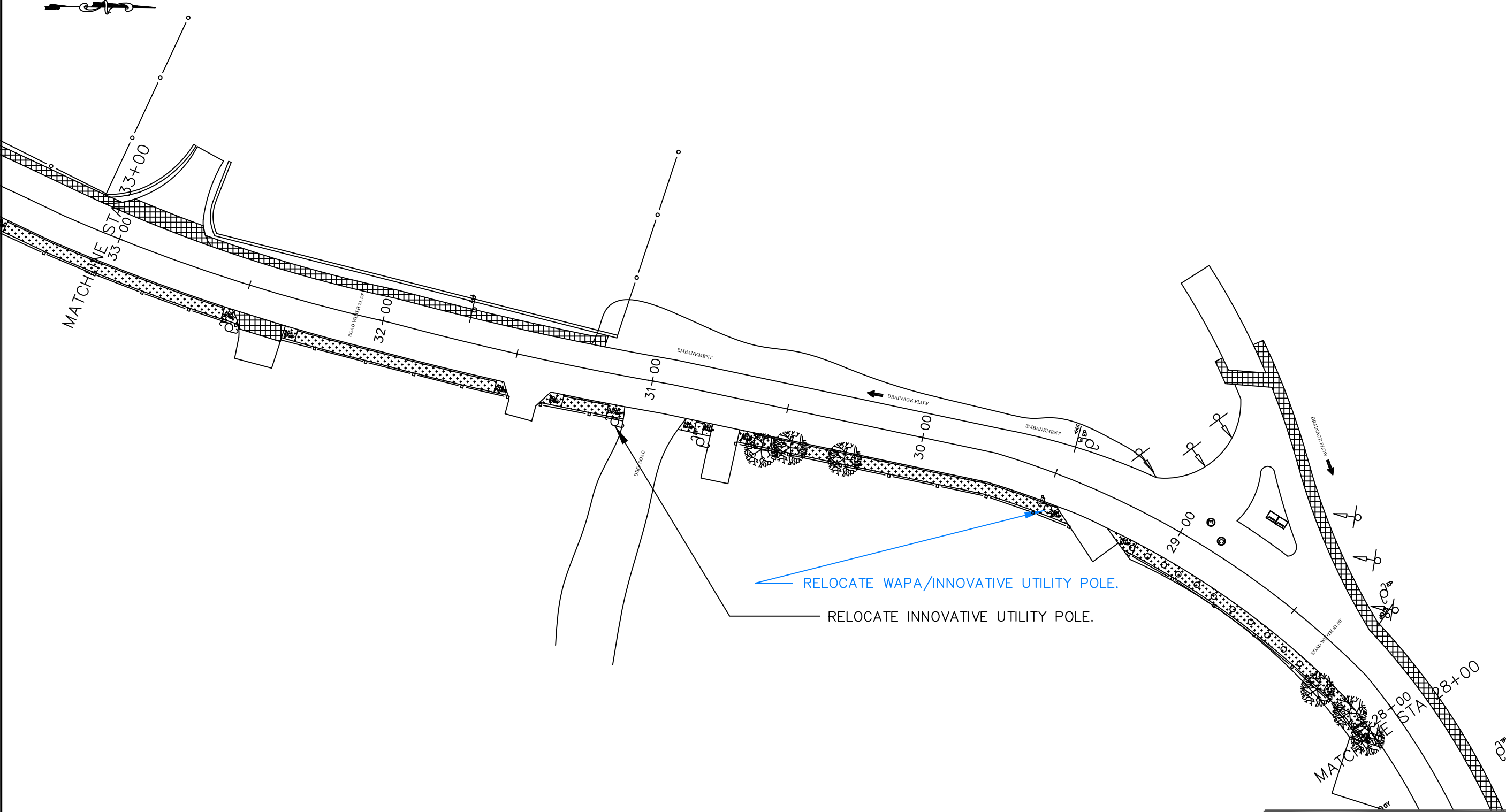
DEPARTMENT OF PUBLIC WORKS
OFFICE OF HIGHWAY ENGINEERING

ROUTE 81
PLAN
STA 127+00 TO 132+12

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	E1	97



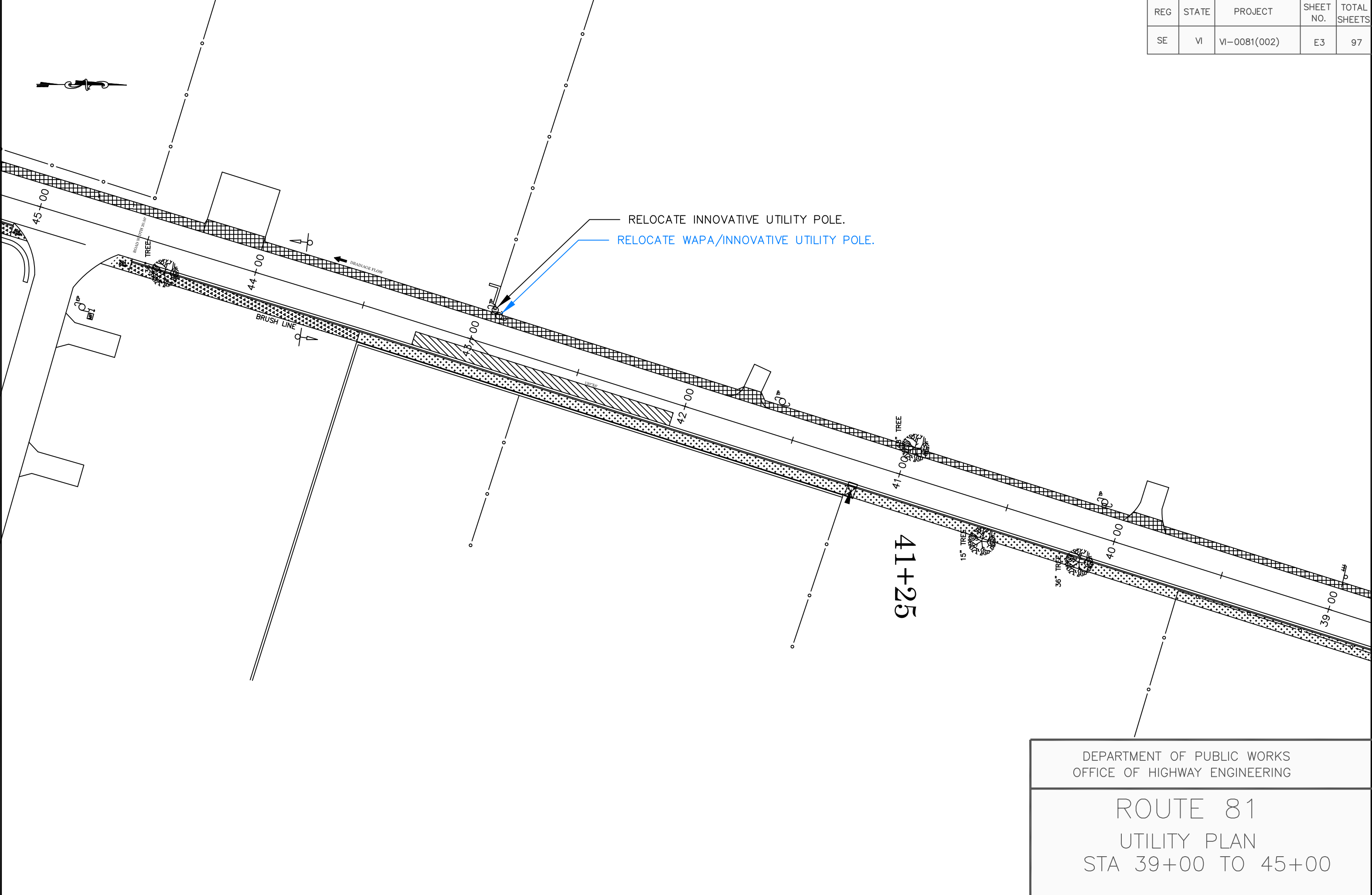
REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	E2	97



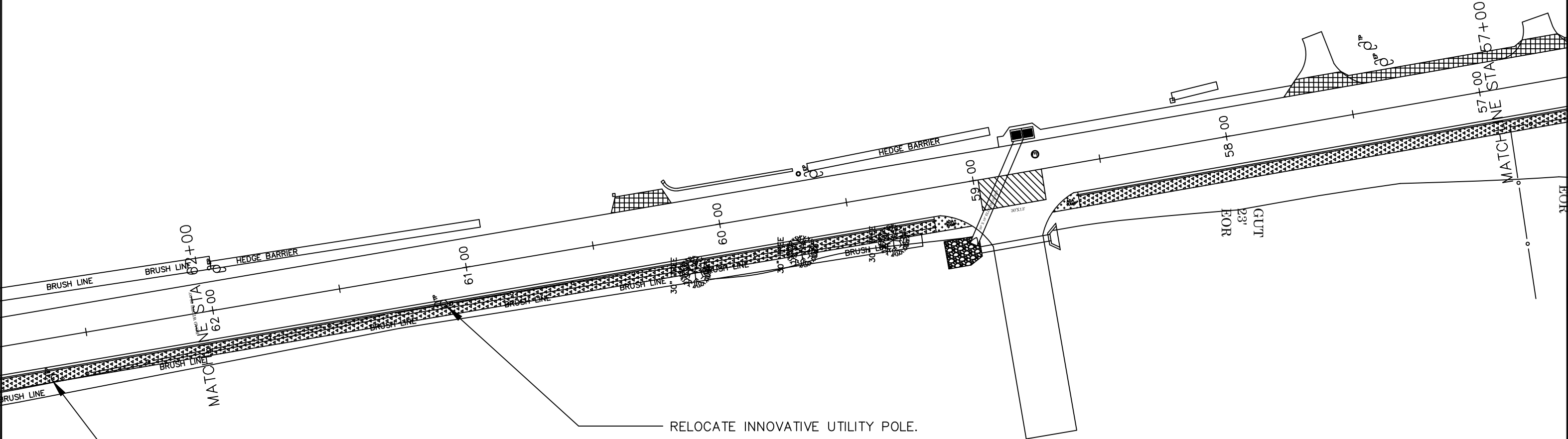
DEPARTMENT OF PUBLIC WORKS
OFFICE OF HIGHWAY ENGINEERING

ROUTE 81
UTILITY PLAN
STA 28+00 TO 33+00

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	E3	97



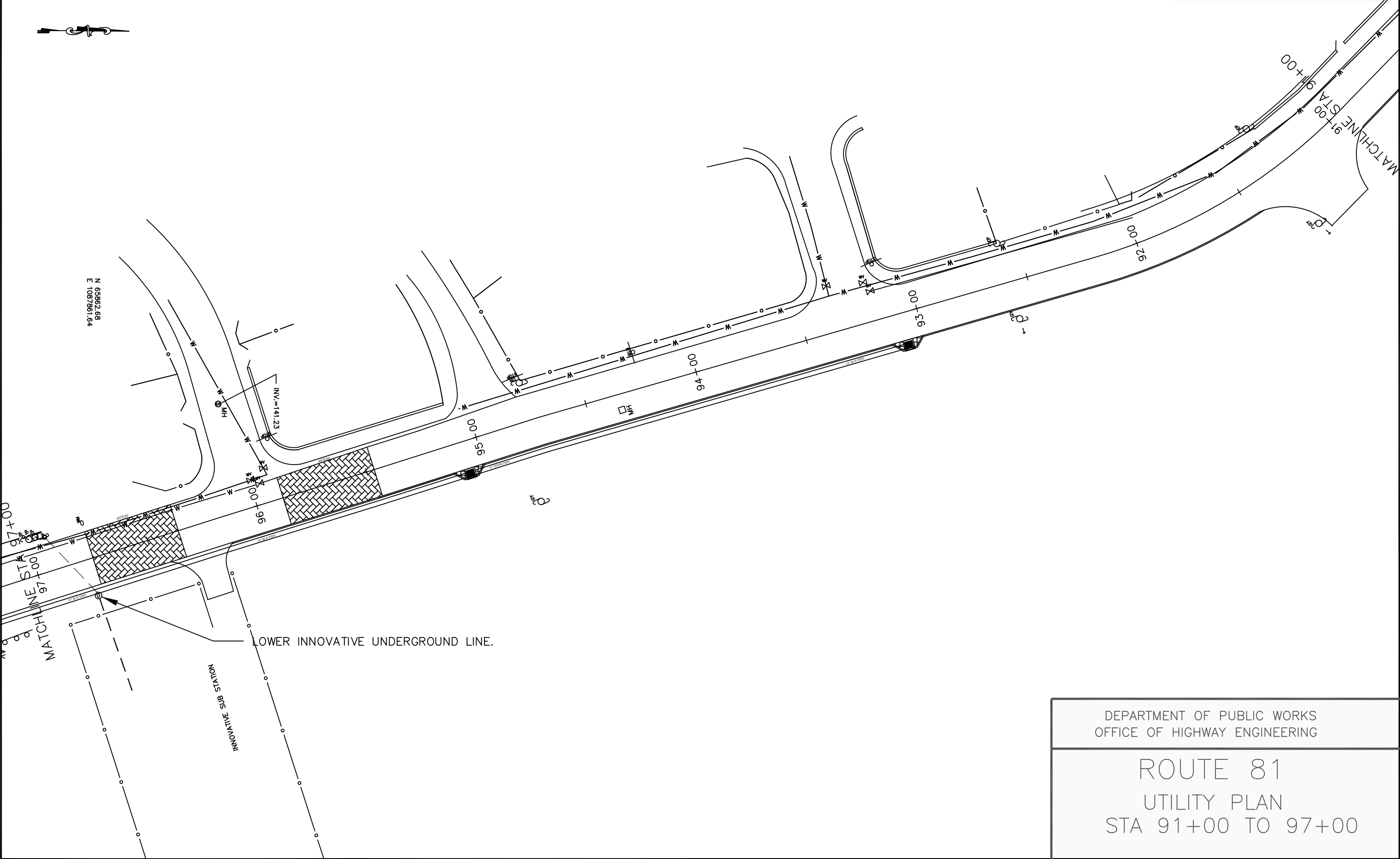
REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	E5	97



DEPARTMENT OF PUBLIC WORKS
OFFICE OF HIGHWAY ENGINEERING

ROUTE 81
UTILITY PLAN
STA 57+00 TO 62+00

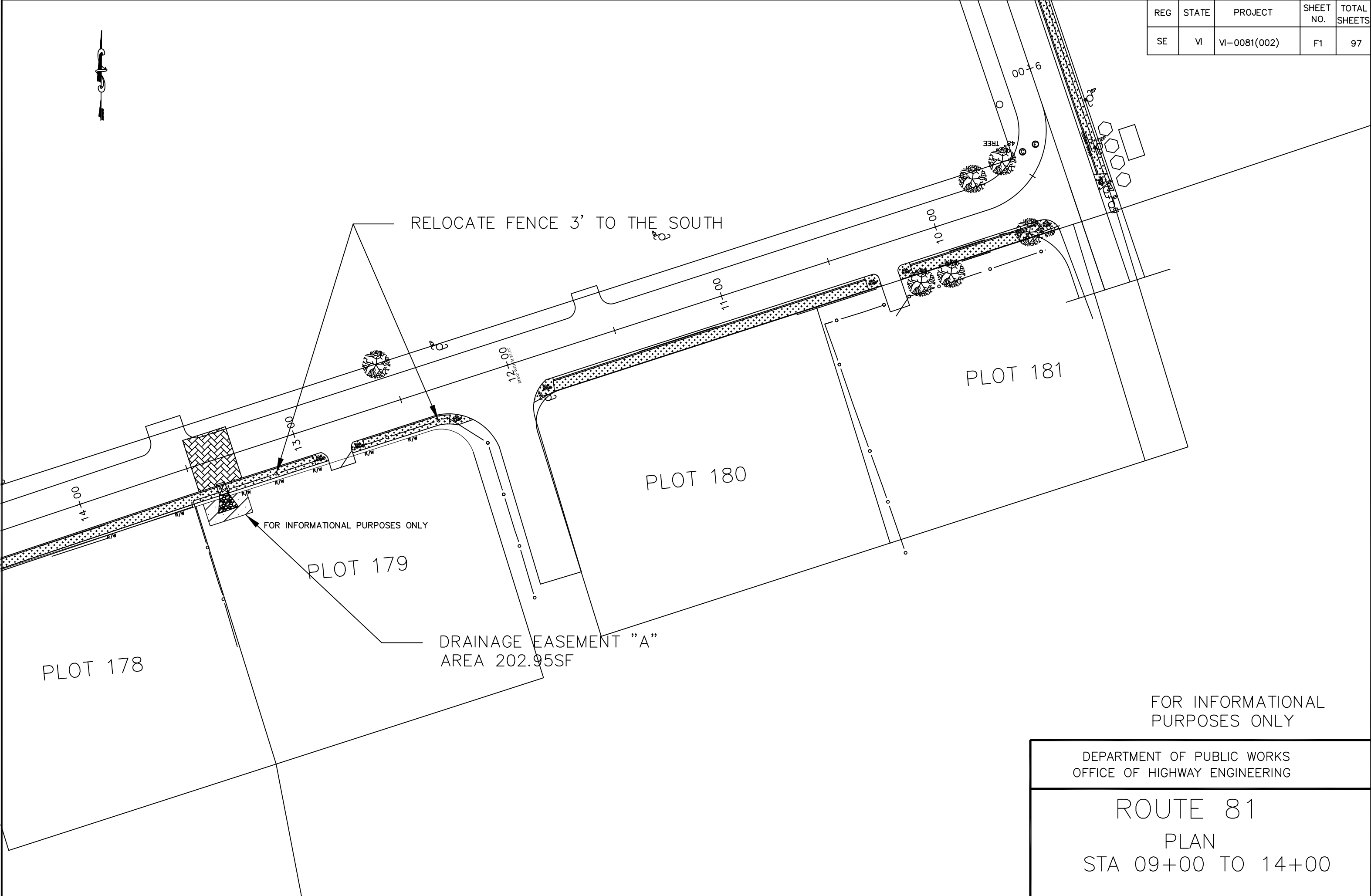
REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	E8	97



DEPARTMENT OF PUBLIC WORKS
OFFICE OF HIGHWAY ENGINEERING

ROUTE 81
UTILITY PLAN
STA 91+00 TO 97+00

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	F1	97



REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	F2	97

PLOT 34

PLOT 35

PLOT 27

RELOCATE FENCE 3' TO 5' SOUTH
OF CURRENT LOCATION.
PROPERTY ACQUISITION REQUIRED "B".
AREA 1,795.96SF

PLOT 4A

FOR INFORMATIONAL
PURPOSES ONLY

DEPARTMENT OF PUBLIC WORKS
OFFICE OF HIGHWAY ENGINEERING

ROUTE 81
PLAN
STA 34+50 TO 40+00

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	F3	97



PLOT 2A

PLOT 2D

PLOT 2H

PLOT 2F

DRAINAGE EASEMENT "E"
AREA 3,724.60SF

PROPERTY ACQUISITION REQUIRED "C"
AREA 1,609.34SF

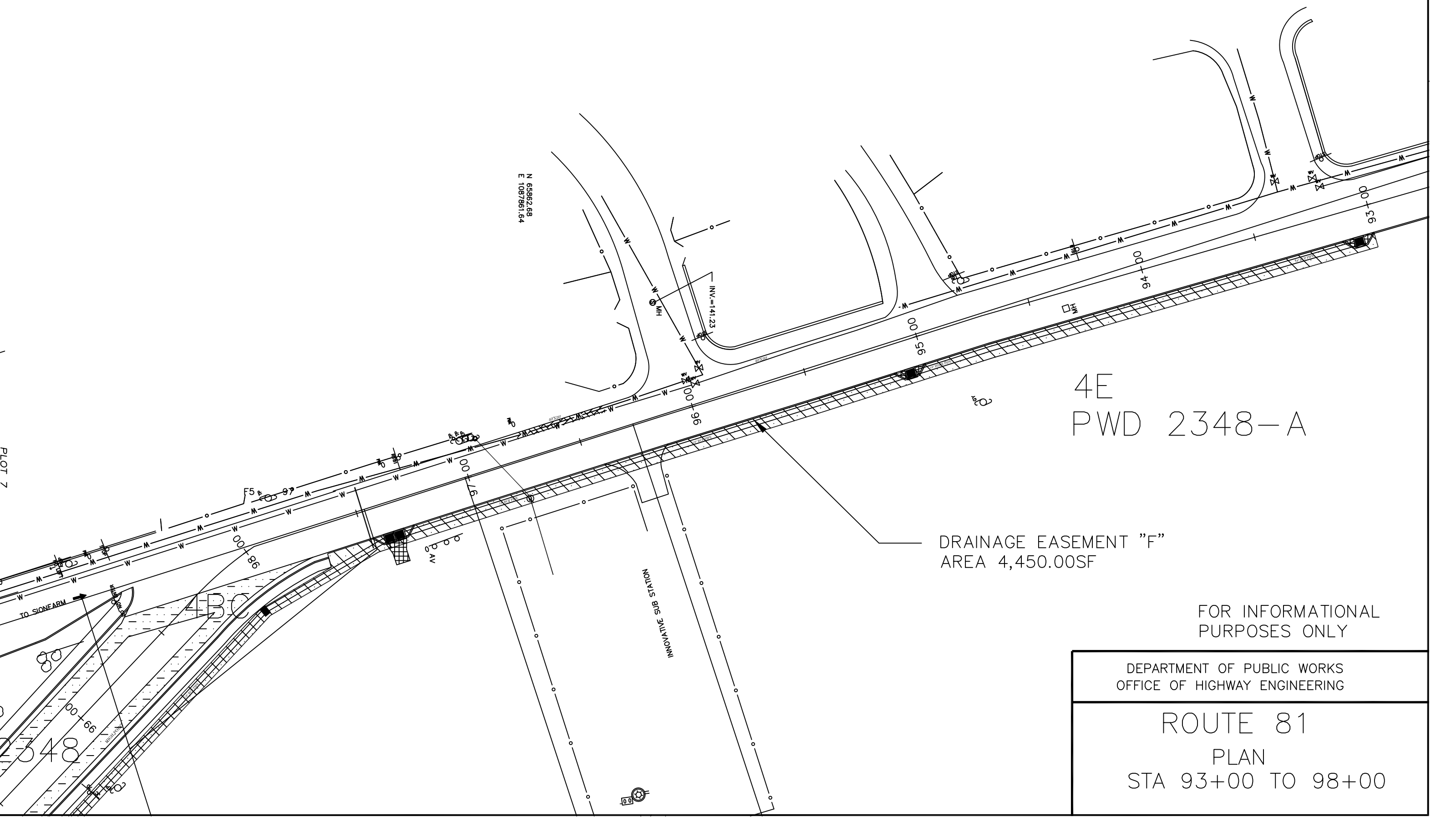
DRAINAGE EASEMENT "D"
AREA 845.30SF

FOR INFORMATIONAL
PURPOSES ONLY

DEPARTMENT OF PUBLIC WORKS
OFFICE OF HIGHWAY ENGINEERING

ROUTE 81
PLAN
STA 78+50 TO 84+00

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	F4	97



4E
PWD 2348-A

DRAINAGE EASEMENT "F"
AREA 4,450.00SF

FOR INFORMATIONAL
PURPOSES ONLY

DEPARTMENT OF PUBLIC WORKS
OFFICE OF HIGHWAY ENGINEERING

ROUTE 81
PLAN
STA 93+00 TO 98+00

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	F5	97

PLOT 7

PLOT 8

36CASTLE COAKLEY
PWD 2335

4BB
PWD 2348

6FA PETERS REST

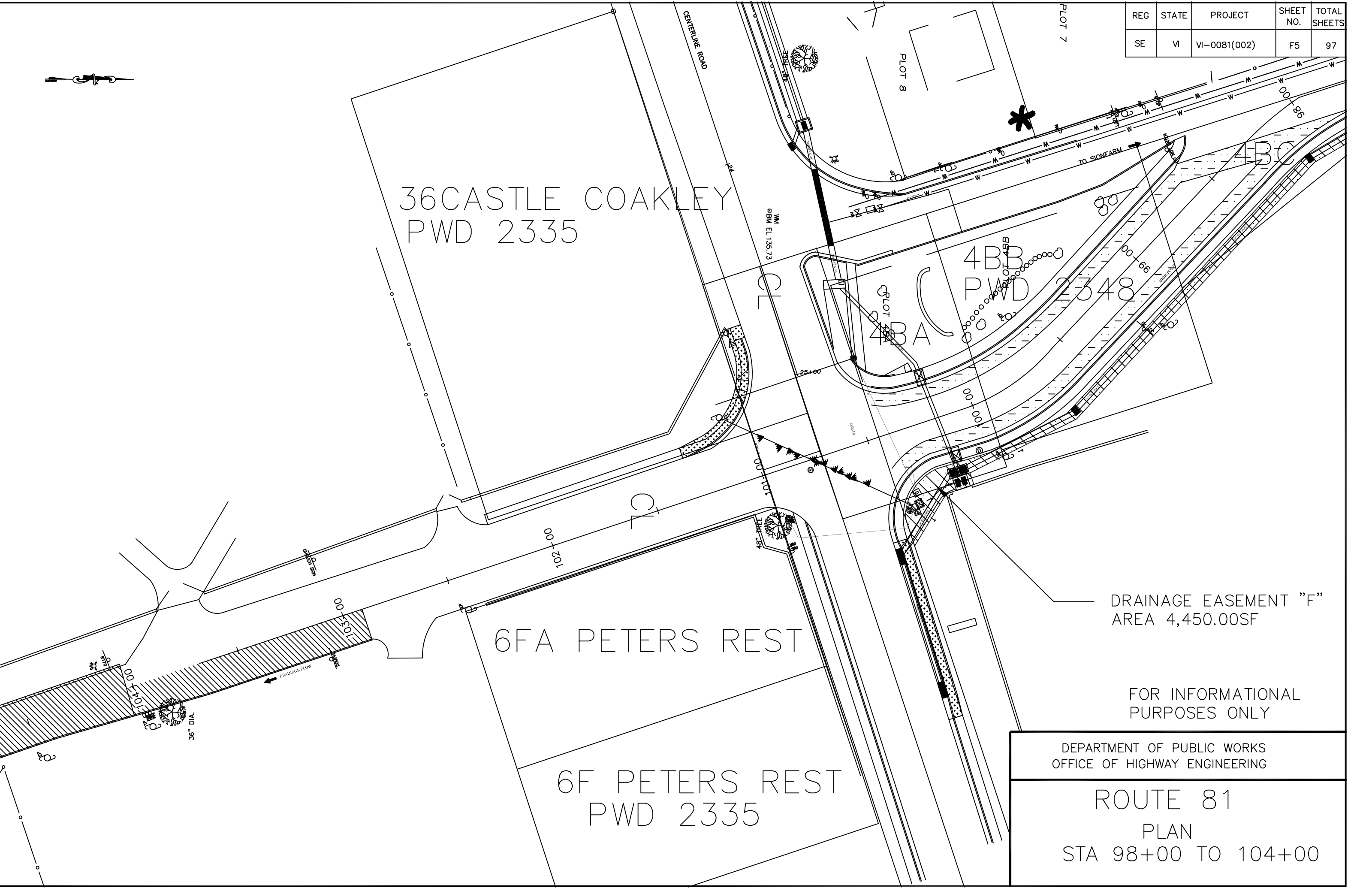
6F PETERS REST
PWD 2335

DRAINAGE EASEMENT "F"
AREA 4,450.00SF

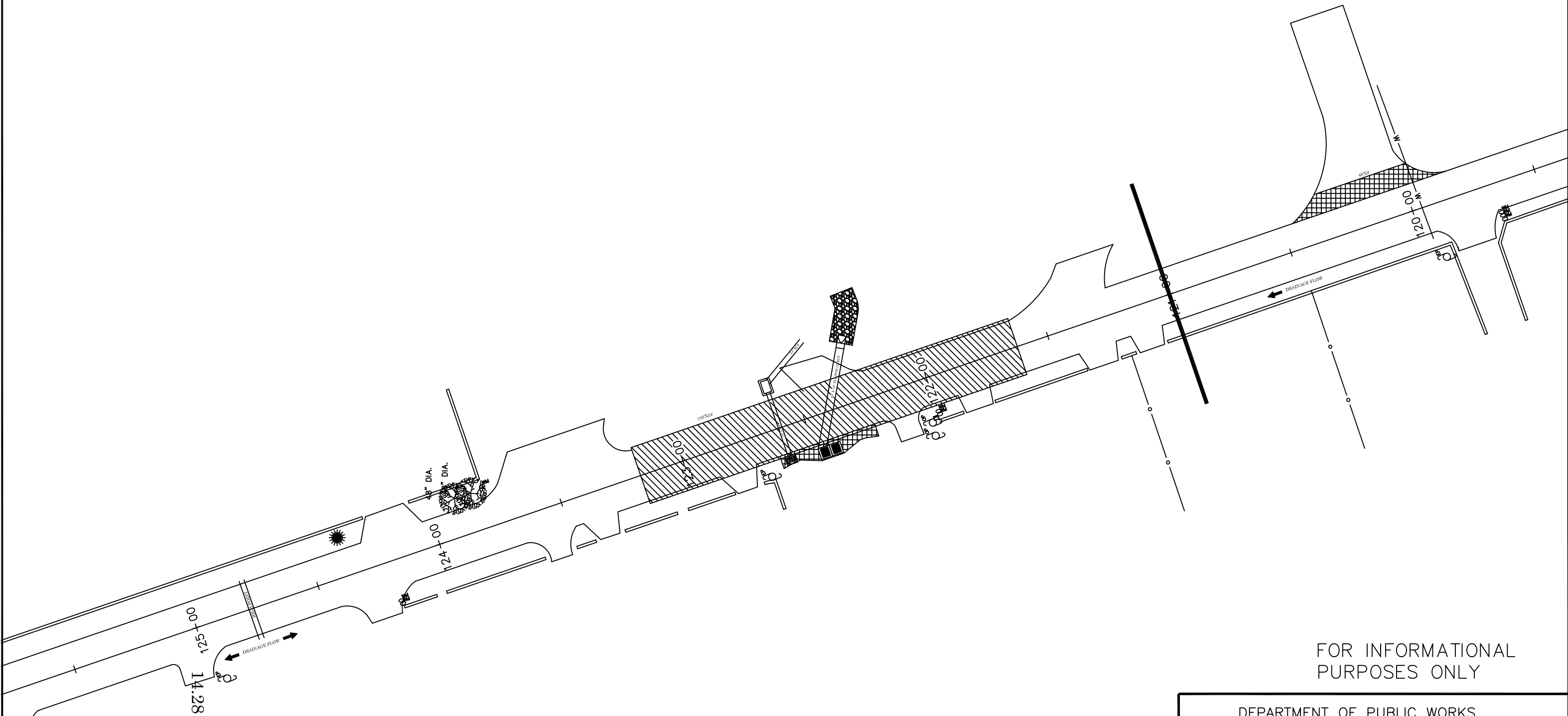
FOR INFORMATIONAL
PURPOSES ONLY

DEPARTMENT OF PUBLIC WORKS
OFFICE OF HIGHWAY ENGINEERING

ROUTE 81
PLAN
STA 98+00 TO 104+00



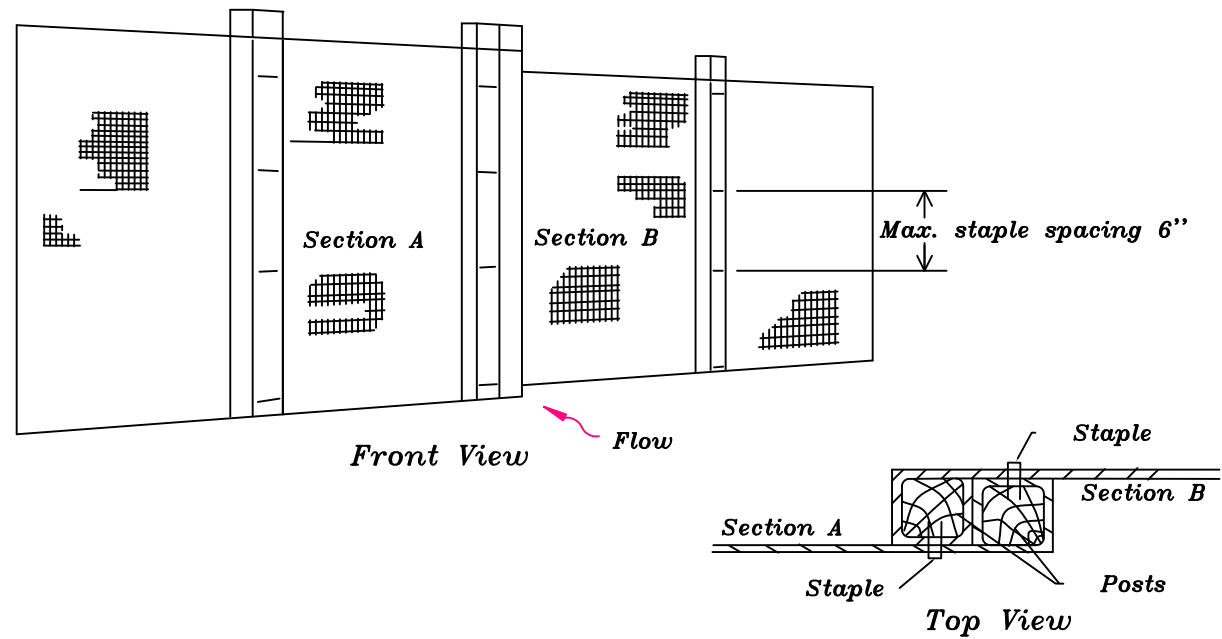
REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	F6	97



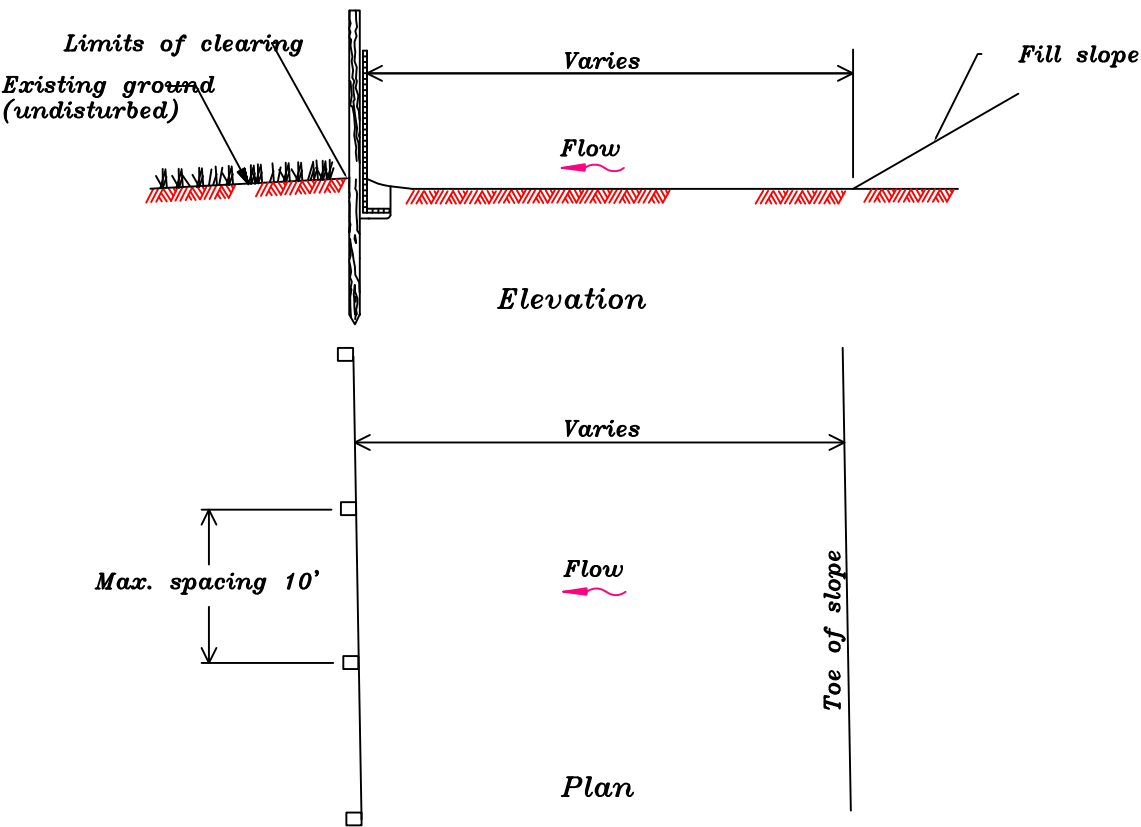
FOR INFORMATIONAL
PURPOSES ONLY

DEPARTMENT OF PUBLIC WORKS OFFICE OF HIGHWAY ENGINEERING
ROUTE 81 PLAN STA 121+00 TO 127+00

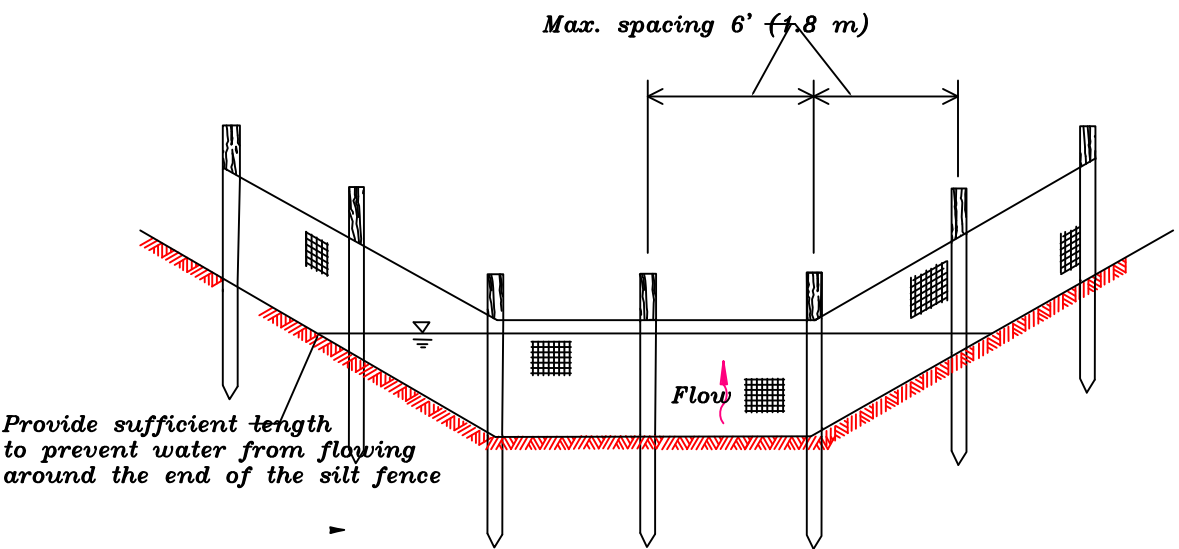
REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	G1	97



JOINING TWO ADJACENT SILT FENCE SECTIONS

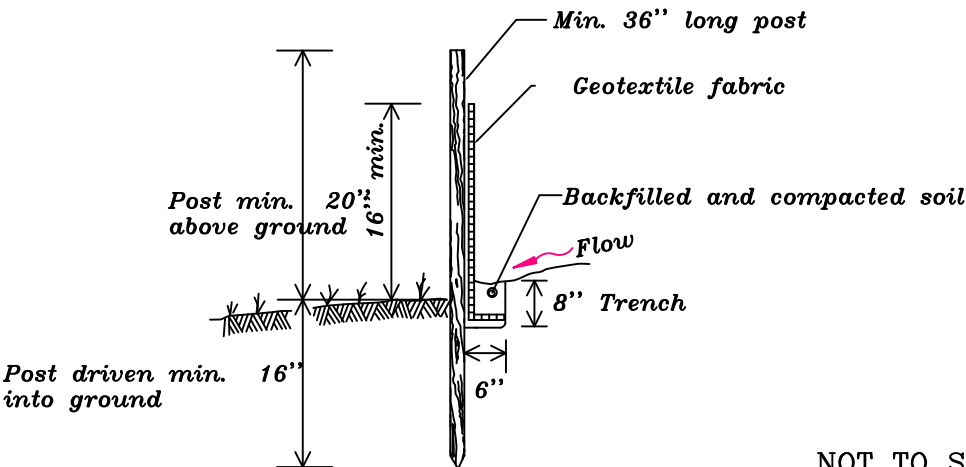


SILT FENCE INSTALLATION AT TOE OF FILL



SILT FENCE INSTALLATION IN A DRAINAGE DITCH

Note: Use drainage ditch installation for low flow conditions only when specified on Erosion Control Plan.

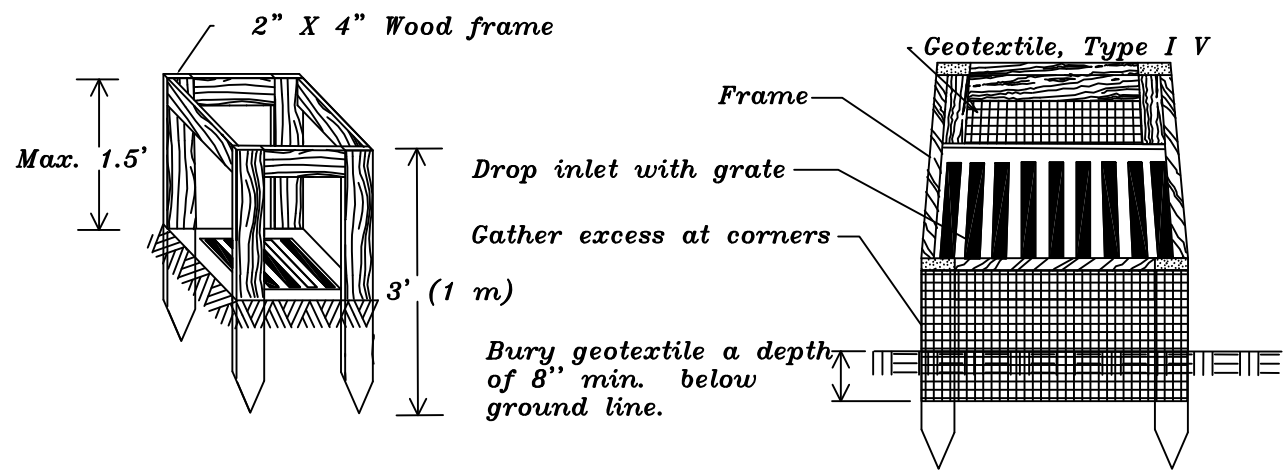


Note:
Alternate pre-assembled silt fence options will be allowed as long as specified minimums are satisfied. Follow manufacturer's information for installation procedures.

NOT TO SCALE

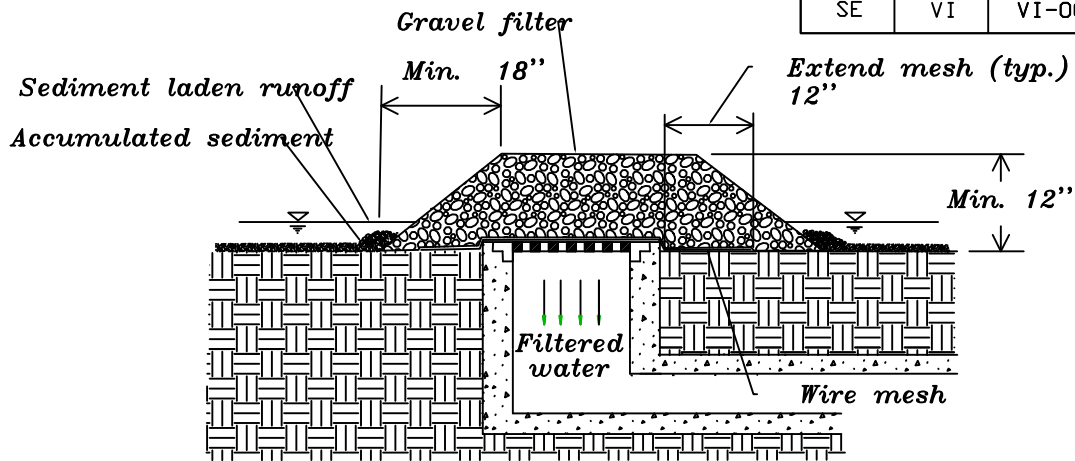
DEPARTMENT OF PUBLIC WORKS OFFICE OF HIGHWAY ENGINEERING	
SILT FENCE	
	DETAIL 15701(A)

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	G2	97



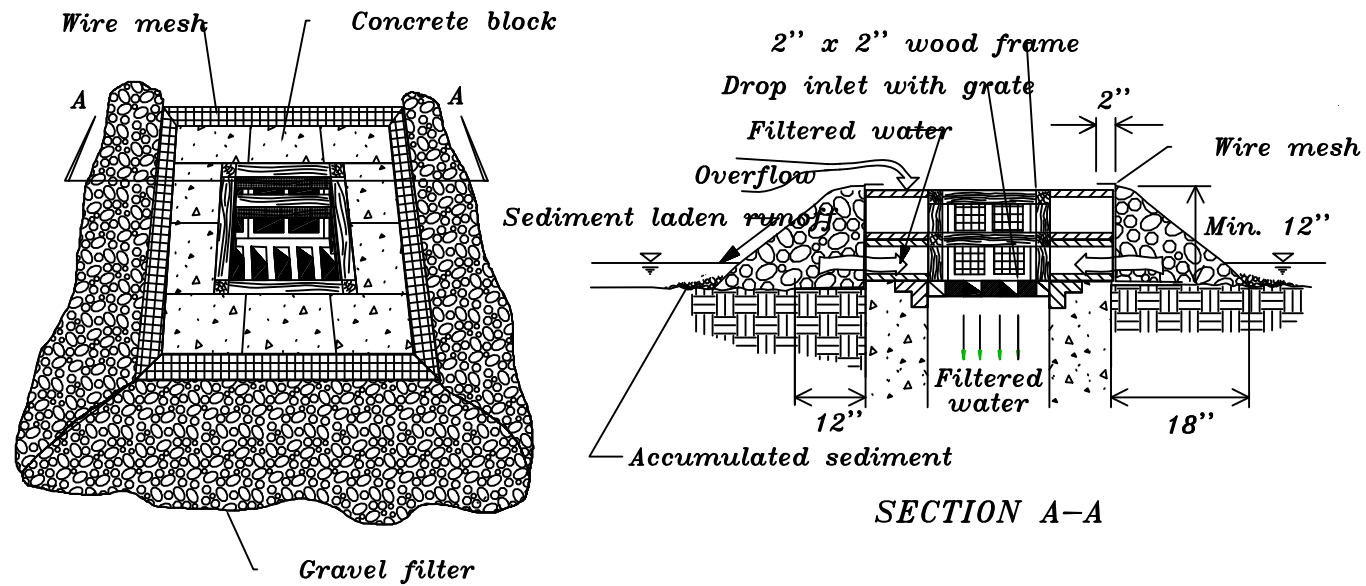
SILT FENCE DROP INLET PROTECTION (TYPE A)

Note: Use Type A inlet protection in sump locations only.

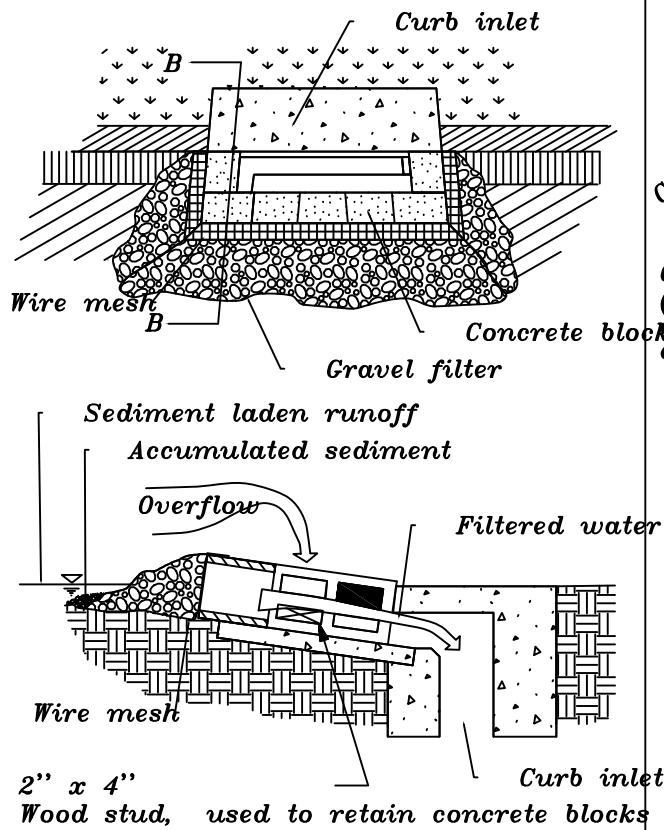


GRAVEL AND WIRE MESH DROP INLET PROTECTION (TYPE B)

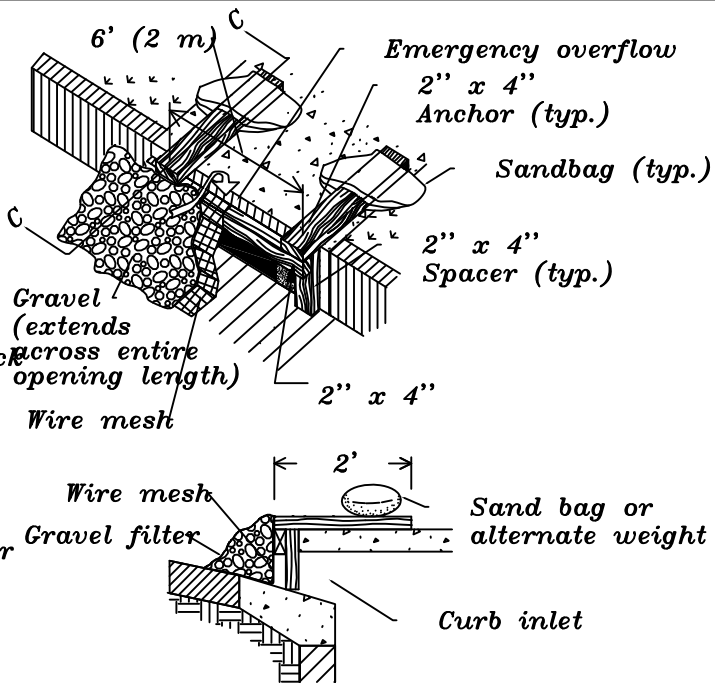
Note: Use Type B inlet protection only in sump locations where heavy concentrated flows are not expected. Do not use where ponding around the structure might cause inconvenience or damage.



BLOCK AND GRAVEL DROP INLET PROTECTION (TYPE C)



**CURB INLET PROTECTION,
BLOCK AND GRAVEL (TYPE D)**



**CURB INLET PROTECTION,
WOODEN WEIR (TYPE E)**

General Notes:

1. For gravel filters use 2" - 3" diameter coarse aggregate.
2. Use wire mesh with 1/2" x 1/2" openings.

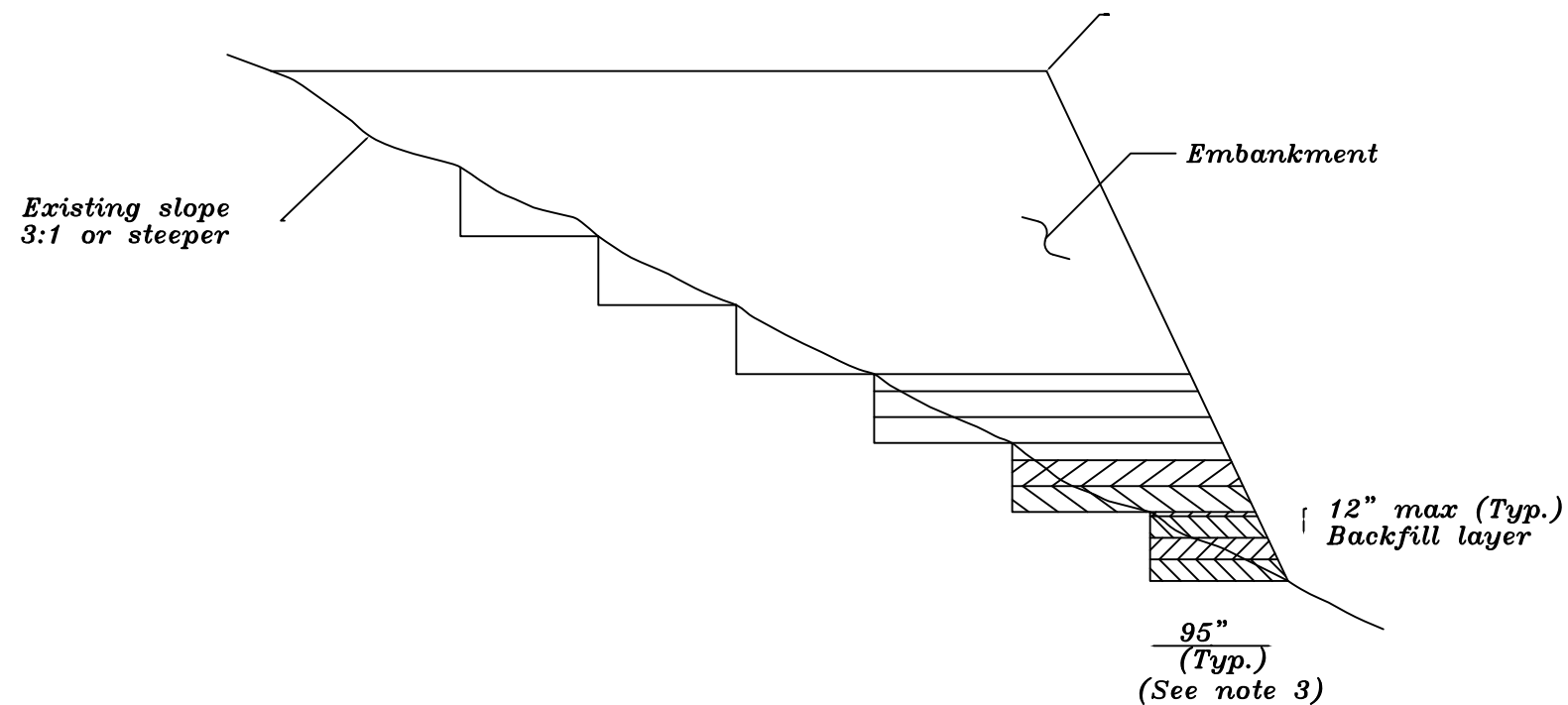
(not to scale)

DEPARTMENT OF PUBLIC WORKS
OFFICE OF HIGHWAY ENGINEERING

**TEMPORARY
INLET PROTECTION**

DETAIL
15701(B)

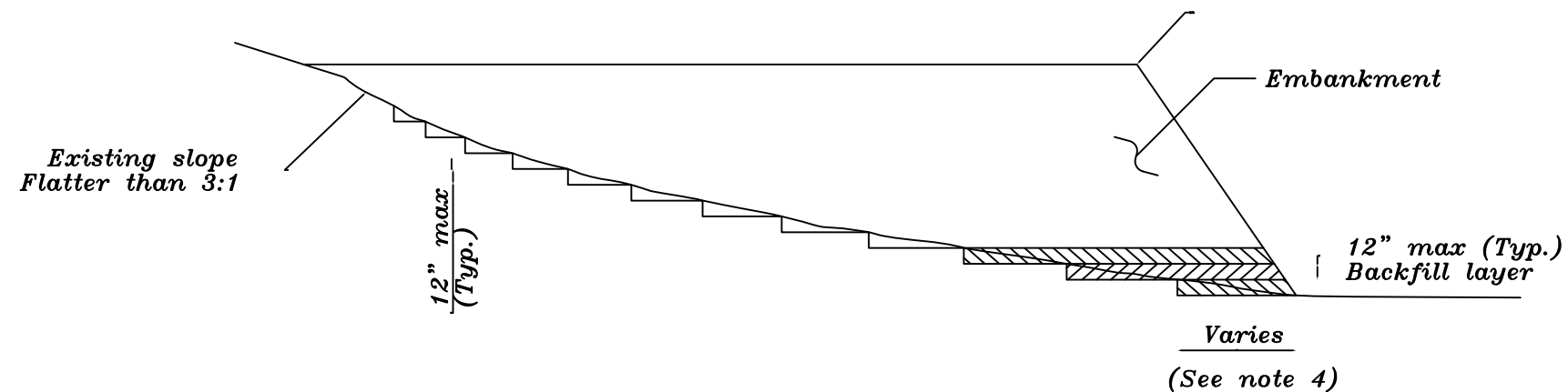
REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	G3	97



BENCHING DETAIL A
SLOPES STEEPER THAN 1:3

NOTES:

1. Where the embankment foundation is a hillside or another existing embankment, the foundation must be benched while the embankment is being constructed.
2. For slopes 3:1 or steeper, refer to Benching Detail A. Cut 8 ft wide horizontal benches in the existing slope. Bench the slope as the embankment is placed and compacted in 1 ft thick layers until a backfill height of 4 ft is reached. Excavate and backfill in a similar manner until the top of slope is reached.
3. For slopes flatter than 3:1, refer to Benching Detail B. Cut into the existing slope until a maximum height of 1 ft is reached, allowing the horizontal distance to vary. Place embankment material. Excavate and backfill in a similar manner until the top of slope is reached.
4. Benching is considered incidental to the item of roadway excavation and no additional measurement of quantity or payment will be made for benching.
5. Refer to Section 204 for benching specifications.
6. Backfill material to be used shall be tailings free of any roots, vegetation or other unsuitable materials. Non-swelling soils with a plasticity index of less than 20 must be compacted to a minimum of 96% dry density.



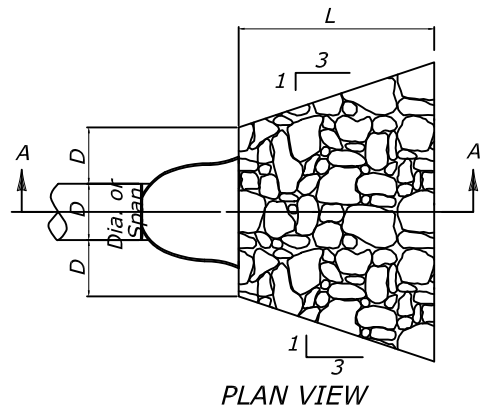
BENCHING DETAIL B
SLOPES FLATTER THAN 1:3

NOT TO SCALE

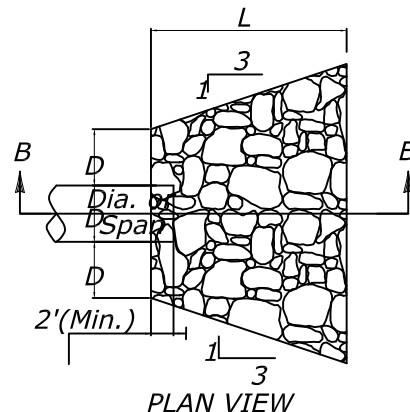
DEPARTMENT OF PUBLIC WORKS
OFFICE OF HIGHWAY ENGINEERING

EMBANKMENT
BENCHING DETAIL

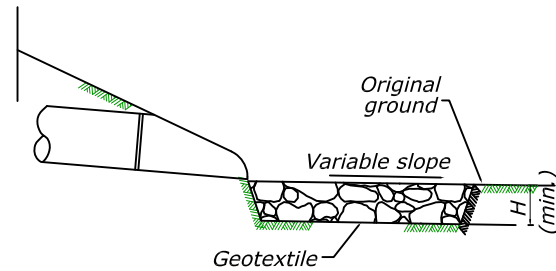
DETAIL
20401(C)



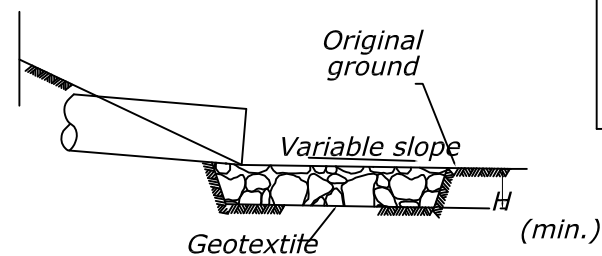
CULVERT WITH STANDARD
END SECTION



CULVERT WITHOUT STANDARD
END SECTION

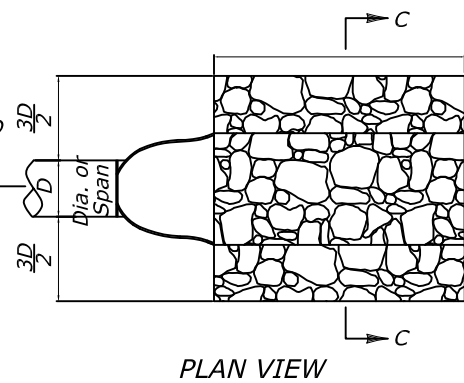


SECTION A-A

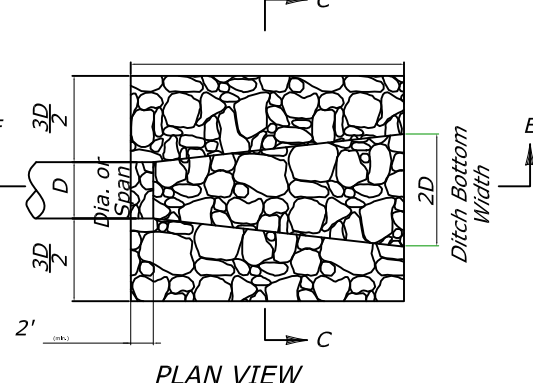


SECTION B-B

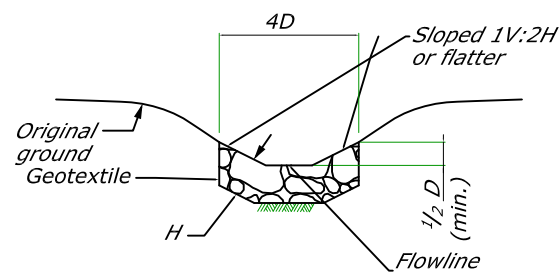
**PROTECTIVE APRON AT CULVERT OUTLET
WITHOUT DITCH**



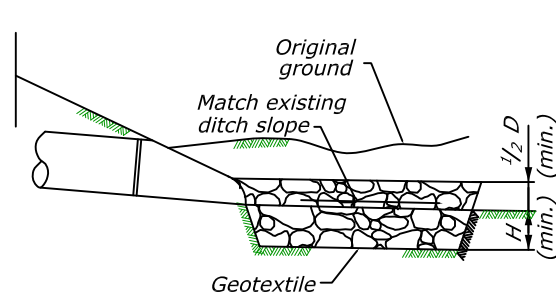
CULVERT WITH STANDARD
END SECTION



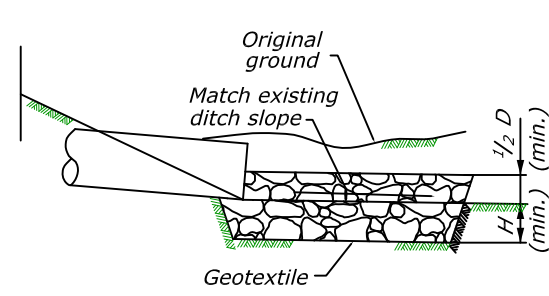
CULVERT WITHOUT STANDARD
END SECTION



SECTION C-C



SECTION D-D



SECTION E-E

**PROTECTIVE APRON AT CULVERT OUTLET
WITH DITCH**

**OUTLET WITHOUT DITCH
PROTECTIVE APRON DIMENSIONS AND ESTIMATED QUANTITIES**

	CULVERT SIZE D (inches)	RIPRAP CLASS	LENGTH OF APRON L (feet)	DEPTH OF APRON H (feet)	ESTIMATED RIPRAP QUANTITY (CY)	ESTIMATED GEOTEXTILE QUANTITY (SY)
WITH END SECTION	12	2	4	1.5	1	5
	18	2	6	1.5	2.2	9
	24	2	8	1.5	3.9	14
	30	3	12.5	2	10.9	28
	36	3	16	2	15.6	37
	42	4	21	2.5	34.1	63
WITHOUT END SECTION	12	2	6	1.5	1.7	8
	18	2	8	1.5	3.2	12
	24	2	10	1.5	5.2	17
	30	3	14.5	2	13.3	33
	36	3	17	2	15.0	33
	42	4	23	2.5	38.7	70
	48	4	26	2.5	49.8	87

**OUTLET WITH DITCH
PROTECTIVE APRON DIMENSIONS AND ESTIMATED QUANTITIES**

	CULVERT SIZE D (inches)	RIPRAP CLASS	LENGTH OF APRON L (feet)	DEPTH OF APRON H (feet)	ESTIMATED RIPRAP QUANTITY (CY)	ESTIMATED GEOTEXTILE QUANTITY (SY)
WITH END SECTION	12	2	4	1.5	0.9	5
	18	2	6	1.5	2	8
	24	2	8	1.5	3.6	13
	30	3	12.5	2	9.3	24
	36	3	15	2	13.4	32
	42	4	21	2.5	27.3	53
WITHOUT END SECTION	12	2	6	1.5	1.4	6
	18	2	8	1.5	2.7	10
	24	2	10	1.5	4.5	15
	30	3	14.5	2	10.8	27
	36	3	17	2	15.2	36
	42	4	23	2.5	29.9	57
	48	4	26	2.5	38.6	70

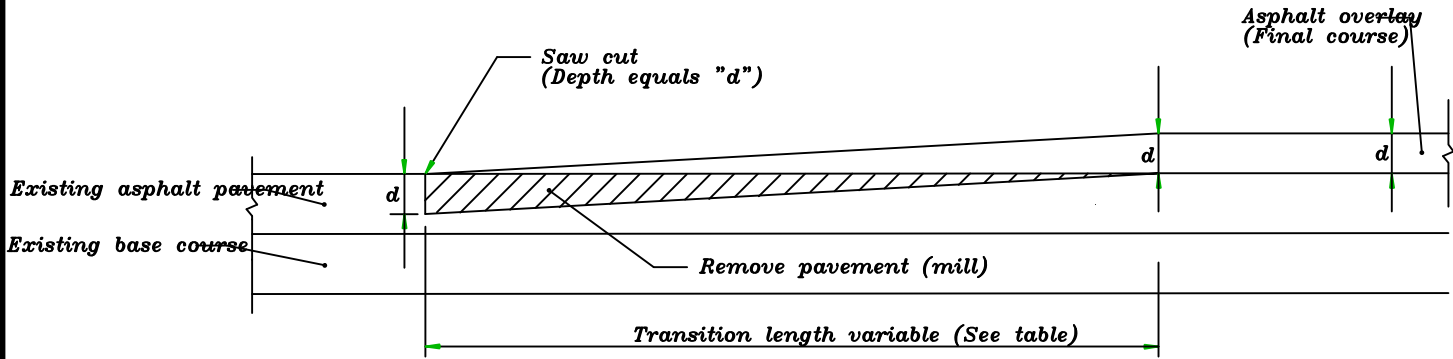
NOT TO SCALE

DEPARTMENT OF PUBLIC WORKS
OFFICE OF HIGHWAY ENGINEERING

PLACED RIP RAP
AT CULVERT OUTLETS

DETAIL
25101

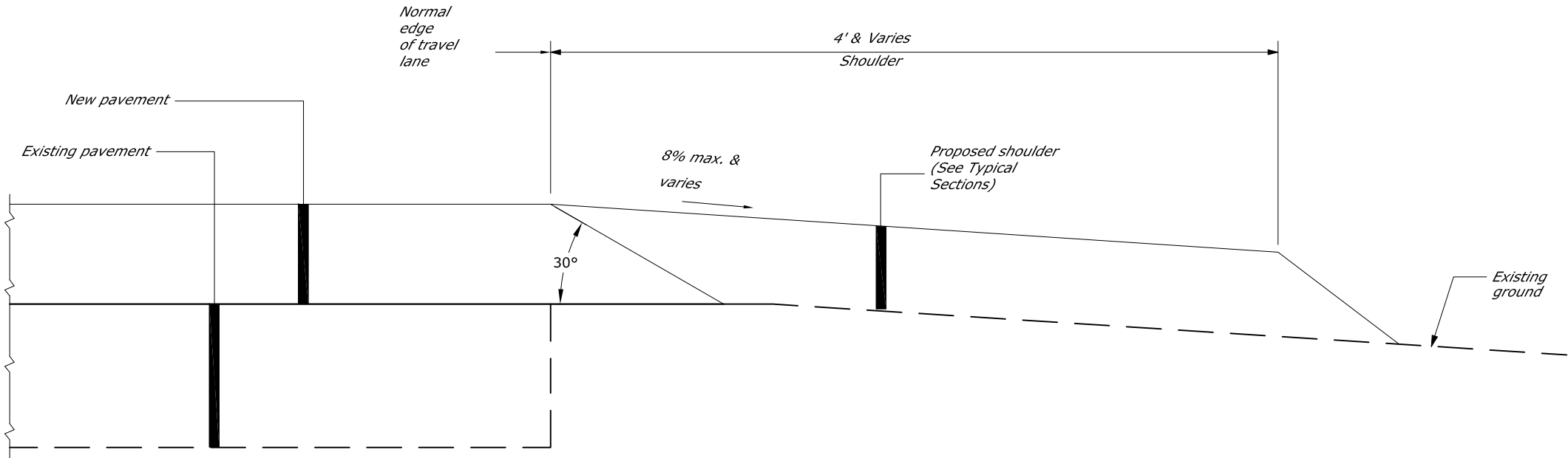
REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081<002>	G5	97



ASPHALT PAVEMENT
MILLING

OVERLAY

<i>d - Inches</i>	<i>Transition Length - Feet</i>
1	20
1.5	30
2	40
2.5	50
3	60



1. Utilize an approved Safety Edge system to create a sloped edge profile onto the roadway shoulder. Utilize an approved Safety Edge system that compacts the AC and provides a sloped wedge equal to 1:1.2 to 1:2.0 measured from the pavement surface cross slope extended. The use of a single plate strike off is not allowed. The Safety Edge shall be constructed monolithically with the AC pavement.
2. Utilize an approved Safety Edge system that is adjustable to accommodate varying paving thicknesses.
3. All Safety Edge systems to be used for the purpose of creating a Safety Edge must meet the approval of the Engineer. The Engineer may require proof that the system has been used on previous projects with acceptable results or may require a test section constructed prior to the beginning of work to demonstrate the edge shape and compaction to the satisfaction of the Engineer.
4. Safety Edge will not be measured for payment.
5. No separate payment will be made for the construction of the Safety Edge. All work associated in the Safety Edge construction shall be integral to the pavement work and shall be included in the contract pricing for those pay items.

ASPHALT PAVEMENT
SAFETY EDGE

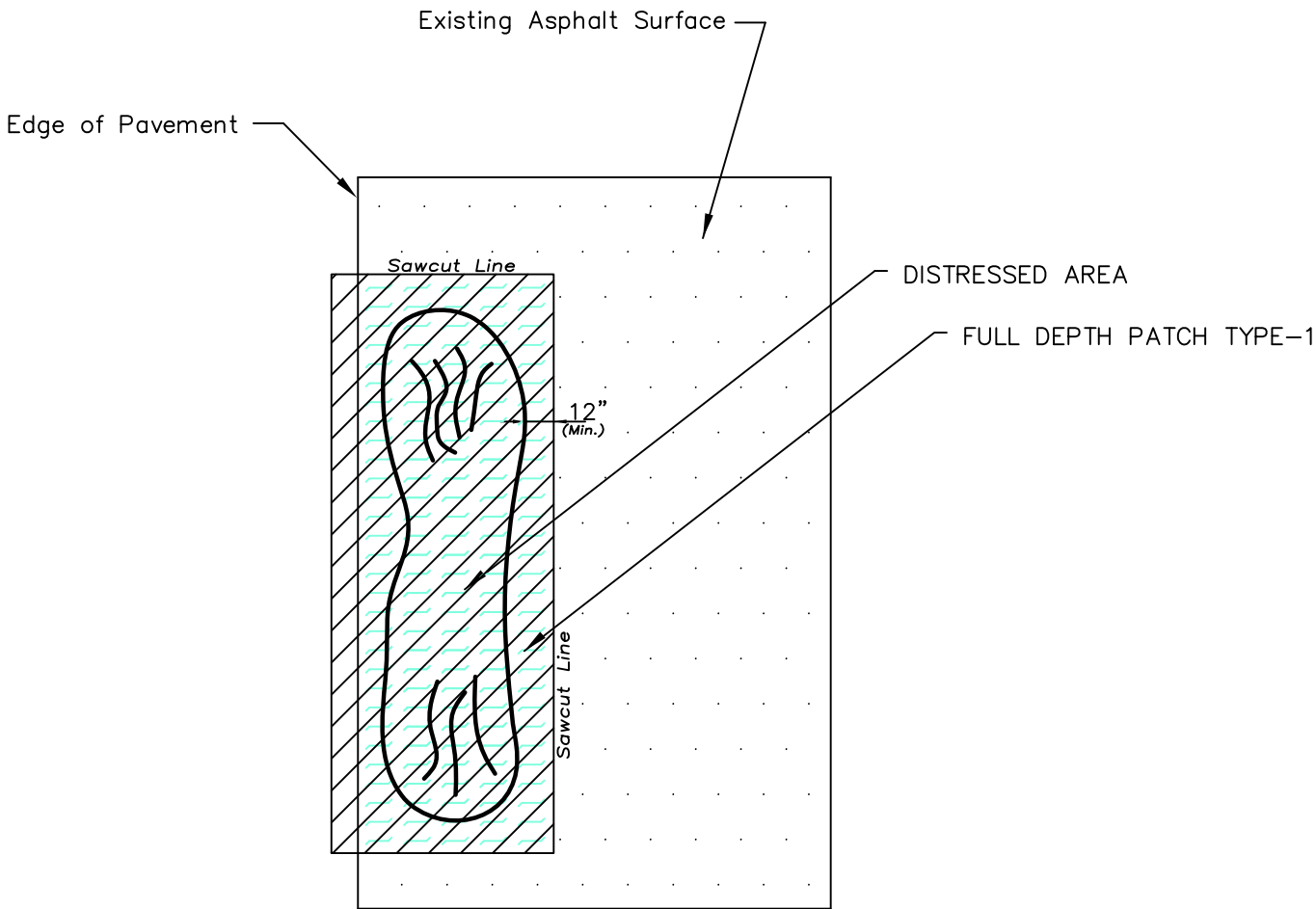
NOT TO SCALE

DEPARTMENT OF PUBLIC WORKS
OFFICE OF HIGHWAY ENGINEERING

DETAIL
ASPHALT PAVEMENT
MILLING & SAFETY EDGE

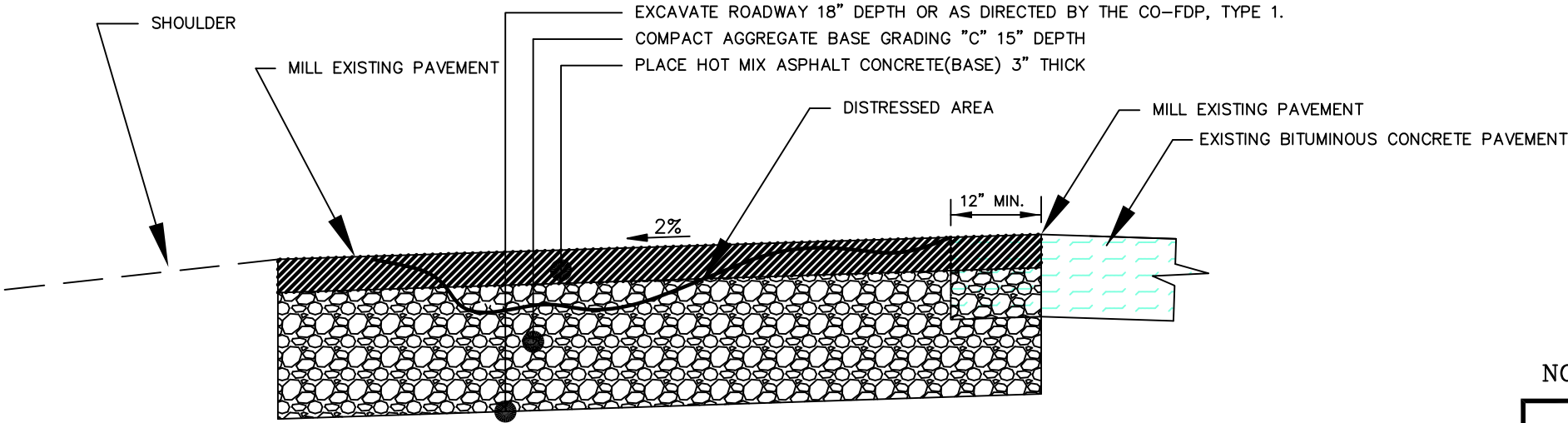
DETAIL
40301/41301

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081<002>	G6	97



FULL DEPTH PATCH TYPE-1 (FDP-1) 41803

1. Mill existing asphalt Pavement 12" minimum from the distressed area or areas shown on the plan.
2. Excavate to a Depth of 18" or to a depth specified by the engineer. Stabilize subgrade.
3. Backfill With approved aggregate grading "C", and place a minimum of two lifts and compact to 95% standard proctor density.
4. Place 3" Warm Mix Asphaltic Concrete and Compact To Provide a Level Surface With Top of Existing Road Surface.

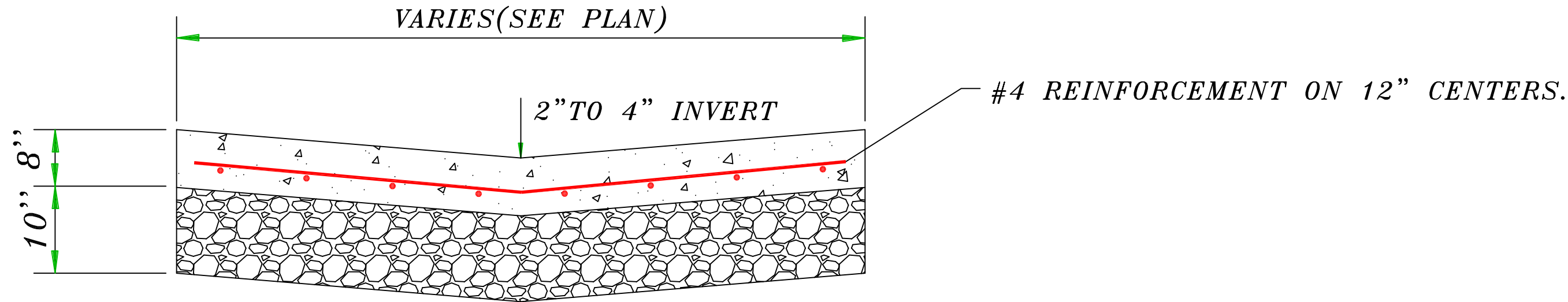


NOT TO SCALE

DEPARTMENT OF PUBLIC WORKS OFFICE OF HIGHWAY ENGINEERING	
DETAIL FULL DEPTH ASPHALT PAVEMENT PATCHING	
	DETAIL 41801

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081<002>	G7	97

1. EXCAVATION AND AGGREGATE GRADING "C" 12" DEPTH WILL BE SUBSIDIARY TO THIS ITEM 50101. REINFORCEMENT IS ALSO SUBSIDIARY TO THIS ITEM OF WORK.
2. USE 4000PSI PORTLAND CEMENT CONCRETE WITH #4 REINFORCEMENT ON 12" CENTERS.
3. ANY SAW CUTTING REQUIRED TO OBTAIN A NEAT STRAIGHT EDGE WILL BE SUBSIDIARY TO THIS ITEM.



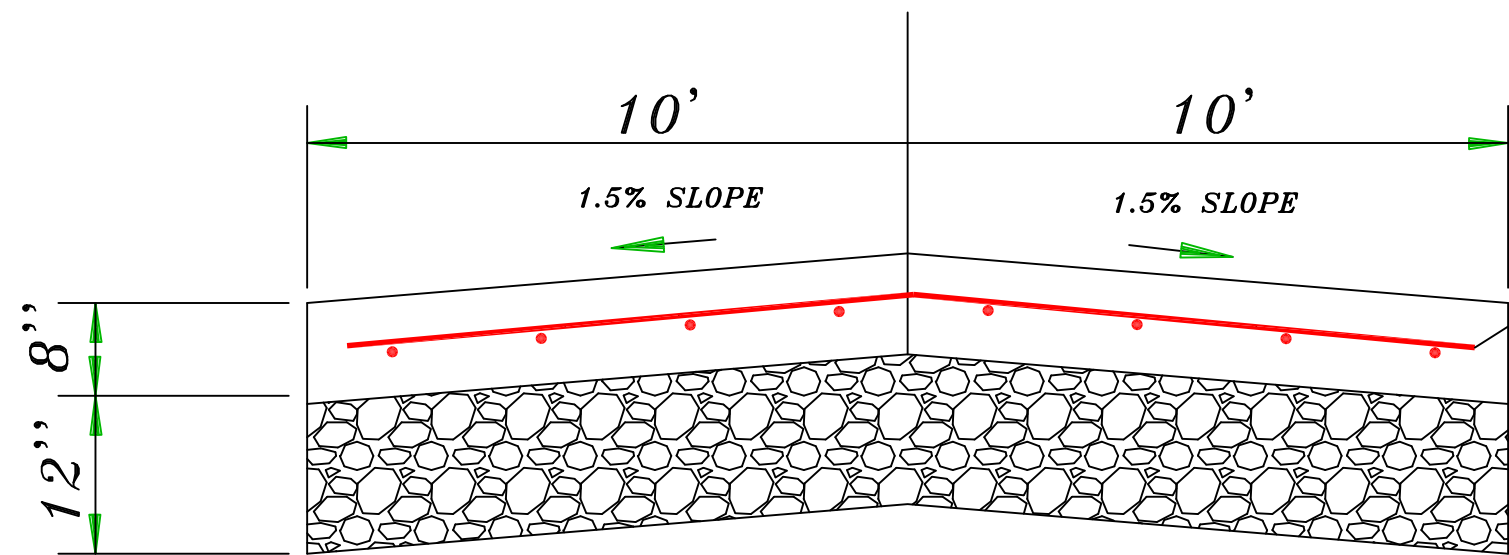
LOW WATERWAY CROSSING

NOT TO SCALE

DEPARTMENT OF PUBLIC WORKS OFFICE OF HIGHWAY ENGINEERING	
DETAIL STRUCTURAL CONCRETE LOW WATERWAY CROSSING	
	DETAIL 50101

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	G8	97

- 1. EXCAVATION AND AGGREGATE GRADING "C" 12" DEPTH WILL BE SUBSIDIARY TO THIS ITEM 50201. REINFORCEMENT IS ALSO SUBSIDIARY TO THIS ITEM OF WORK.
- 2. USE 4000PSI PORTLAND CEMENT CONCRETE WITH #4 REINFORCEMENT ON 12" CENTERS.
- 3. ANY SAW CUTTING REQUIRED TO OBTAIN A NEAT STRAIGHT EDGE WILL BE SUBSIDIARY TO THIS ITEM.



#4 REINFORCEMENT ON 12" CENTERS.

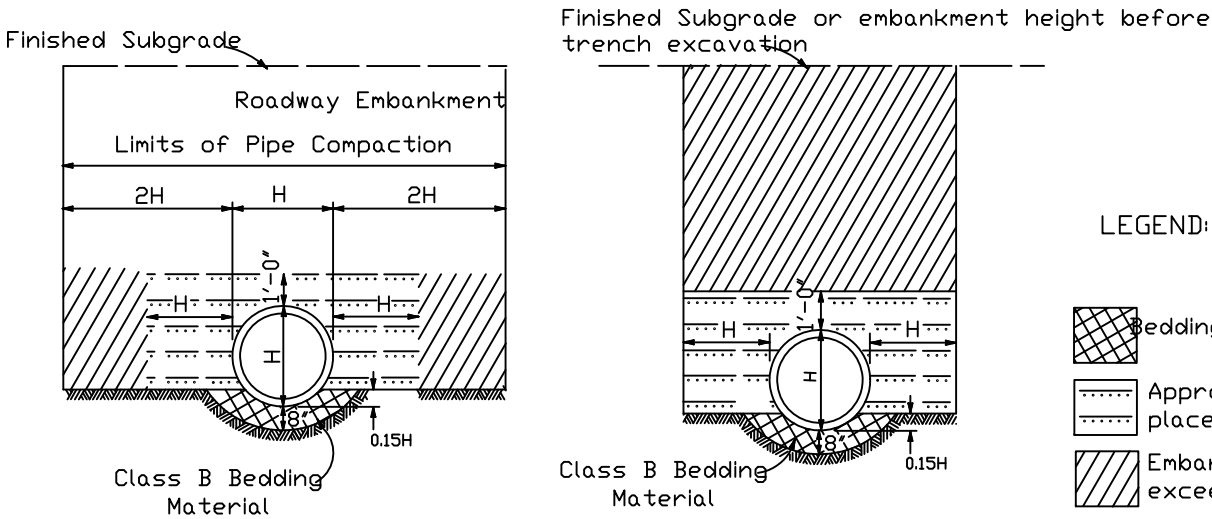
CONCRETE PAVEMENT
RESTORATION

DEPARTMENT OF PUBLIC WORKS OFFICE OF HIGHWAY ENGINEERING	
DETAIL CONCRETE PAVEMENT RESTORATION	
	DETAIL 50201

CONCRETE ROUND PIPE CULVERT									
FILL HEIGHT AND PIPE CLASS TABLE									
PIPE SIZE DIAMETER INCHES	EMBANKMENT					TRENCH			
	MINIMUM COVER INCHES	CLASS II	CLASS III	CLASS IV	CLASS V	CLASS II	CLASS III	CLASS IV	CLASS V
		MAXIMUM FILL HEIGHT ABOVE TOP OF PIPE IN FEET							
12	24	11	11	16	23	18	18	26	37
18	24	10	10	25	39	14	14	31	45
24	24	11	11	15	31	15	15	22	40
30	24	9	13	16	35	13	17	20	46
36	24	9	9	20	41	11	14	26	56
48	24	12	14	26	44	16	17	31	50
60	24	15	17	28	44	15	20	32	50
72	24	13	17	31	41	16	20	35	49
84	24	13	19	31		15	23	37	
96	24	13	20			16	24		
108	24	16	20			19	26		

NOTE:

- When directed, camber pipe culverts upward from a chord through the inlet and outlet inverts an ordinate amount equal to 1% of the pipe length. Develop camber on a parabolic curve. If the midpoint elevation on the parabolic curve as designed exceeds the elevation of the inlet invert, reduce the amount of camber or increase the pipe culvert gradient.
- Measure minimum cover from the top of the pipe culvert to the subgrade for flexible pavements, and to the top of the pavement for rigid pavements. Measure maximum fill height from the top of the pipe to the top of the pavement for both flexible and rigid pavements.
- Pipe compaction limits shown are for pipe installation in an embankment. For pipe installation in a trench, the compaction limits shall be the walls of the trench.
- Where unyielding or unstable material is encountered, install the pipe culvert according to the limits of pipe compaction shown on standard 602-3.
- When grades exceed 10%, install supplemental concrete pipe ties on pipe culvert or install bell and spigot pipe.
- Maximum fill heights for pipe culvert installations may be increased on approval of site-specific structural pipe designs meeting the criteria of AASHTO Standard Specifications for Highway Bridges.

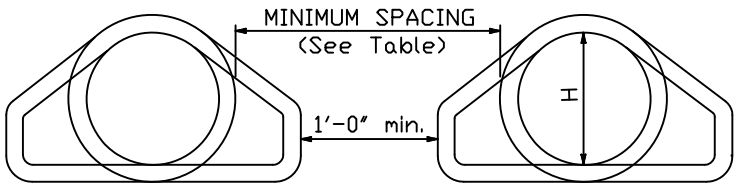


LEGEND:

- Bedding Material
- Approved granular material or fine compactable soil placed in layers not exceeding 6" compacted depth.
- Embankment material placed in layers not exceeding 6" compacted depth.
- Impermeable backfill material

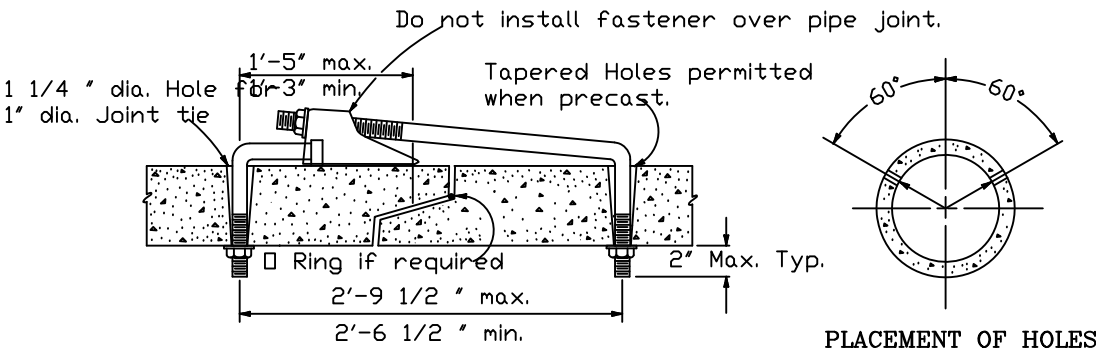
EMBANKMENT INSTALLATION

TRENCH INSTALLATION

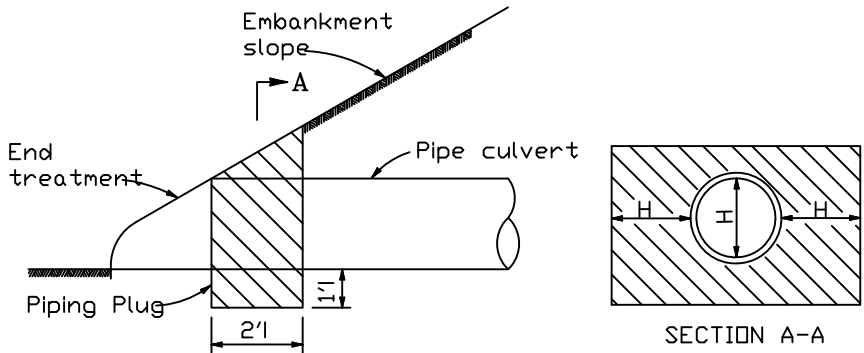


MINIMUM SPACING		
DIAMETER INCHES	EMBANKMENT	TRENCH
12-36	15'	2H
36-96	1/2	72'
OVER 96	48'	72'

MULTIPLE ROUND PIPE INSTALLATION



SUPPLEMENTAL CONCRETE PIPE TIE

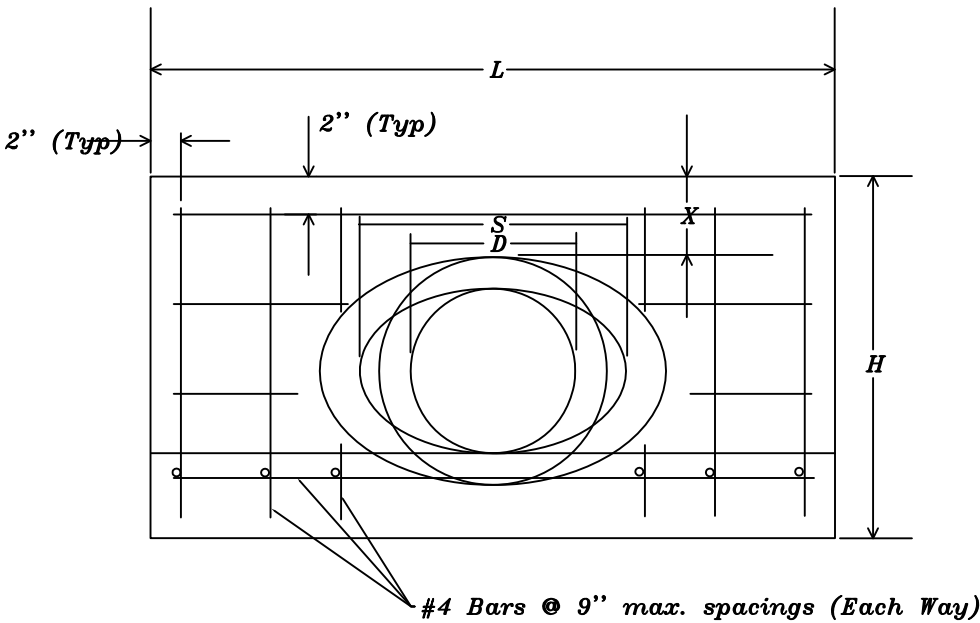


Construct a piping plug of impermeable backfill material at the pipe inlet where granular material is used for backfill.

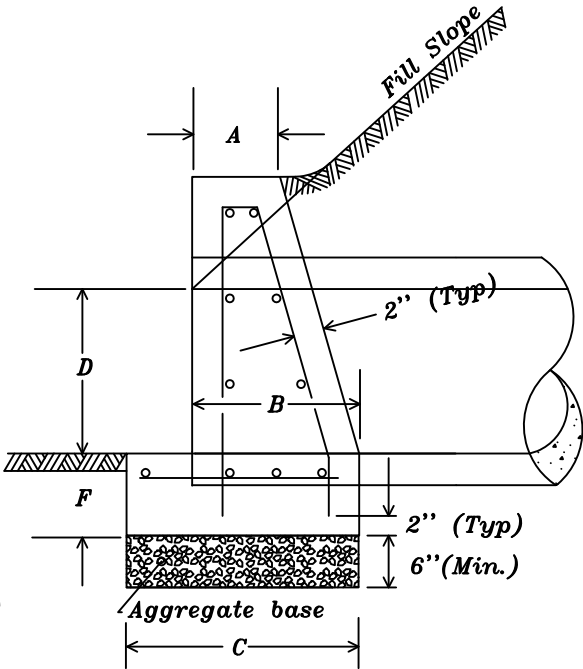
PIPING PLUG

NOT TO SCALE

DEPARTMENT OF PUBLIC WORKS OFFICE OF HIGHWAY ENGINEERING	
DETAIL	
CONCRETE PIPE CULVERT INSTALLATION	
	DETAIL 60201(A)/(B)



FRONT ELEVATION



SIDE ELEVATION

- Notes:
- 1. All headwalls are oriented parallel to the roadway centerline unless otherwise indicated on the plans or by the CO.
 - 2. When pipes are on a skew, adapt and lengthen headwalls as directed.
 - 3. Chamfer all exposed corners not rounded to 3/4 inch.
 - 4. Quantities shown are for one headwall with pipe at right angles.
 - 5. Construct headwalls using dimensions shown under values for 1 1/2:1 slope, unless otherwise designated by the CO.
 - 6. Provide reinforcing bars 0.9L or 0.9L' long.
 - 7. Place a 4 inch depth concrete apron with #6 (6"x6") W.W.M. 3' from concrete footing of the headwall.

HEADWALL FOR CIRCULAR PIPE						
DIAMETER OF PIPE CULVERT						
	6"	15"	18"	21" or 24"	27" or 30"	33" or 36"
A	0'-6"	0'-8"	0'-9"	0'-11"	1'-0"	1'-0"
B	0'-9"	1'-1"	1'-3"	1'-6"	1'-9"	2'-0"
C	1'-2"	1'-7"	1'-9"	2'-2"	2'-6"	2'-9"
D	1'-0"	1'-3"	1'-6"	2'-0"	2'-6"	3'-0"
F	0'-6"	0'-8"	0'-8"	0'-9"	0'-9"	0'-9"
H	2'-0"	2'-11"	3'-2"	3'-9"	4'-3"	4'-9"
L	3'-8"	5'-0"	6'-0"	8'-0"	10'-0"	12'-0"
CU. YDS. CONCRETE						
Conc. Pipe	0.241	0.492	0.697	1.319	2.067	2.947
C. M. Pipe	0.257	0.521	0.739	1.398	2.198	3.145

HEADWALL FOR ELLIPTICAL PIPE											
SIZE OF ELLIPTICAL PIPE CULVERT (SPAN X RISE)											
	23" x 14"	30" x 19"	34" x 22"	38" x 24"	42" x 27"	45" x 29"	49" x 32"	53" x 34"	60" x 38"	66" x 43"	
A	0'-8"	0'-9"	0'-10"	0'-11"	0'-11"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	
B	1'-2"	1'-5"	1'-6"	1'-8"	1'-9"	1'-10"	1'-11"	1'-11"	1'-11"	2'-0"	
C	1'-8"	1'-11"	2'-1"	2'-4"	2'-5"	2'-7"	2'-8"	2'-9"	3'-3"	3'-6"	
D	1'-2"	1'-7"	1'-10"	2'-0"	2'-3"	2'-5"	2'-8"	2'-10"	3'-2"	3'-7"	
F	0'-8"	0'-8"	0'-9"	0'-9"	0'-9"	0'-9"	0'-9"	0'-9"	0'-9"	0'-9"	
H	2'-10"	3'-3"	3'-7"	3'-9"	4'-0"	4'-2"	4'-5"	4'-7"	4'-11"	5'-4"	
L	5'-5"	7'-2"	8'-6"	9'-2"	10'-2"	10'-11"	12'-1"	12'-11"	13'-0"	13'-0"	
S	1'-11"	2'-6"	2'-10"	3'-2"	3'-6"	3'-9"	4'-1"	4'-5"	5'-0"	5'-8"	
CU. YDS. CONCRETE											
Conc. Pipe	0.502	0.855	1.236	1.500	1.811	2.101	2.512	2.801	2.969	2.904	

HEADWALL FOR DBL. ELLIPTICAL PIPE						
DIAMETER OF PIPE CULVERT						
	6"	15"	18"	21" or 24"	27" or 30"	33" or 36"
A	0'-6"	0'-8"	0'-9"	0'-11"	1'-0"	1'-0"
B	0'-9"	1'-1"	1'-3"	1'-6"	1'-9"	2'-0"
C	1'-2"	1'-7"	1'-9"	2'-2"	2'-6"	2'-9"
D	1'-0"	1'-3"	1'-6"	2'-0"	2'-6"	3'-0"
F	0'-6"	0'-8"	0'-8"	0'-9"	0'-9"	0'-9"
H	2'-0"	2'-11"	3'-2"	3'-9"	4'-3"	4'-9"
L	3'-8"	5'-0"	6'-0"	8'-0"	10'-0"	12'-0"
CU. YDS. CONCRETE						
Conc. Pipe	0.241	0.492	0.697	1.319	2.067	2.947
C. M. Pipe	0.257	0.521	0.739	1.398	2.198	3.145

NOT TO SCALE

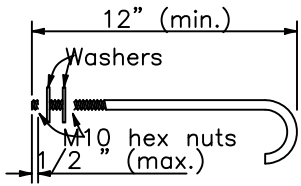
DEPARTMENT OF PUBLIC WORKS
OFFICE OF HIGHWAY ENGINEERING

MINOR CONCRETE
HEADWALL FOR CULVERT

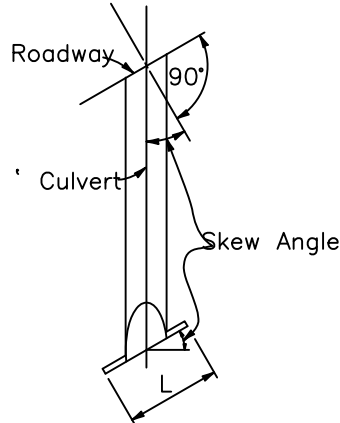
Sheet No. 1

DETAIL
60101

HEADWALL FOR DOUBLE PIPE CULVERT																					
DIMENSIONS, REINFORCING STEEL AND CONCRETE TABLE OF QUANTITIES																					
D in	H ft	SQUARE HEADWALL					15° SKEW					30° SKEW					45° SKEW				
		A ft	B ft	L ft	CONC ft ³	STEEL lb	A ft	B ft	L ft	CONC ft ³	STEEL lb	A ft	B ft	L ft	CONC ft ³	STEEL lb	A ft	B ft	L ft	CONC ft ³	STEEL lb
47	4.9	3.9	5.9	13.8	54.7	189.6	4.3	6.2	14.8	56.5	205.0	4.6	6.9	16.1	63.2	216.0	5.6	8.5	19.7	77.3	271.2
53	5.2	4.6	6.9	16.1	65.7	222.7	4.9	6.9	16.7	68.9	227.1	5.2	7.9	18.4	77.0	253.5	6.6	9.8	23.0	94.3	319.7
59	5.4	5.2	7.5	18.0	77.3	253.5	5.6	7.9	19.0	80.2	264.6	6.2	8.5	21.0	89.3	297.6	7.5	10.5	25.6	109.5	363.8
65	5.7	5.9	8.2	20.0	89.0	313.1	6.2	8.5	21.0	91.8	321.9	6.9	9.5	23.3	102.4	366.0	8.5	11.5	28.5	125.7	460.8
71	5.9	6.6	8.9	22.0	100.6	343.9	6.9	9.2	23.0	104.2	363.8	7.5	10.5	25.6	116.5	412.3	9.2	12.8	31.2	142.7	511.5
77	6.2	7.2	9.8	25.3	121.5	405.6	7.2	10.2	24.6	125.7	381.4	8.2	11.2	27.6	140.2	429.9	10.2	13.8	34.1	171.6	535.7
83	6.4	7.9	10.5	26.2	128.5	445.3	7.9	11.2	26.9	133.1	449.7	8.9	11.8	29.5	148.7	493.8	11.2	14.8	37.1	181.9	628.3
89	6.6	8.5	11.2	28.2	142.3	478.4	8.5	11.8	28.9	147.3	487.2	9.8	12.8	32.5	164.6	551.1	11.8	16.1	39.7	201.3	679.0
95	6.9	8.9	11.8	29.5	152.2	509.3	9.2	12.1	30.5	157.5	522.5	10.5	13.8	34.8	175.9	599.6	12.8	17.1	42.7	215.4	738.5
100	7.1	9.5	12.5	31.5	167.0	571.0	9.8	13.1	32.8	173.0	606.3	11.2	14.4	36.7	193.2	683.4	13.8	17.7	45.3	236.3	831.1
106	7.4	10.2	13.1	33.5	182.6	621.7	10.5	13.5	34.4	188.9	643.7	11.8	15.1	38.7	210.8	727.5	14.4	18.4	47.2	258.1	881.8
112	7.6	10.8	13.5	35.1	196.0	652.6	11.2	14.1	36.4	203.1	676.8	12.5	15.4	40.4	226.4	751.8	15.4	19.4	50.2	277.2	943.6
118	7.9	11.5	14.1	37.1	212.6	698.9	11.8	14.4	38.1	220.0	709.9	13.1	16.1	42.3	245.4	787.0	16.4	19.7	52.5	304.8	981.0
124	8.1	12.1	14.4	38.7	226.7	769.4	12.5	15.1	40.0	234.8	795.9	14.1	16.7	44.9	262.0	895.1	17.1	20.3	54.5	320.7	1075.8
130	8.4	12.8	15.1	40.7	244.4	815.7	13.1	15.4	41.7	252.9	837.7	14.8	17.4	46.9	282.2	945.8	18.0	21.3	57.4	345.7	1161.8
136	8.6	13.5	15.4	42.3	259.6	851.0	13.8	16.1	43.6	268.4	879.6	15.4	17.7	48.6	299.8	985.4	19.0	22.0	60.0	366.9	1214.7
142	8.9	14.1	16.1	44.3	278.3	936.9	14.4	16.4	45.3	288.2	961.2	16.1	18.4	50.5	321.4	1073.6	20.0	22.3	62.3	393.8	1336.0
148	9.1	14.8	16.4	45.9	294.5	983.2	15.1	17.1	47.2	305.1	1011.9	16.7	19.0	52.5	340.4	1135.4	20.7	23.3	64.6	416.7	1410.9
154	9.4	15.1	17.1	47.2	308.3	1020.7	15.7	17.4	48.9	319.2	1053.8	17.7	19.7	55.1	356.0	1199.3	21.7	23.9	67.3	435.8	1463.8
160	9.6	15.7	17.4	48.9	325.2	1104.5	16.4	18.0	50.9	336.5	1153.0	18.4	20.3	57.1	375.7	1300.7	22.6	24.6	69.9	460.1	1598.3
166	9.8	16.4	18.0	50.9	346.1	1168.4	17.1	18.4	52.5	358.1	1203.7	19.0	20.7	58.7	399.4	1349.2	23.3	25.6	72.2	489.1	1675.5
172	10.1	17.1	18.4	52.5	363.7	1219.1	17.7	19.0	54.5	376.5	1258.8	19.7	21.3	60.7	420.2	1415.3	24.3	26.2	74.8	515.6	1761.5
178	10.3	17.7	19.0	54.5	385.3	1269.8	18.4	19.7	56.4	398.7	1318.3	20.3	22.0	62.7	445.0	1457.2	25.3	26.9	77.4	544.9	1812.2



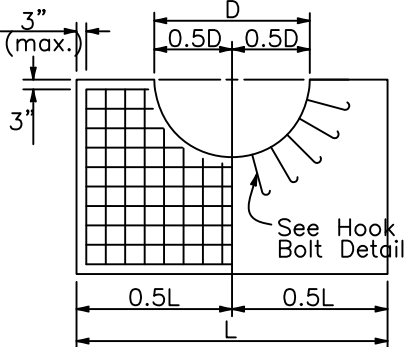
M10 HOOK BOLT DETAILS



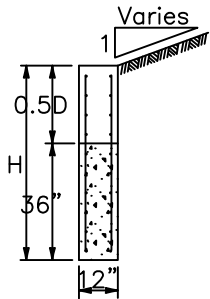
TYPICAL HALF PLAN

- NOTES:
- Concrete conforms to Section 601. Pour concrete monolithically. Chamfer all exposed edges 3/4" and finish all exposed surfaces with a Class 1 ordinary finish.
 - Clearance for reinforcing steel is 2" unless otherwise noted.
 - Headwall dimension "H" may be reduced in solid rock provided the wall is keyed into the rock at least 12". Excavate and backfill according to Section 209.
 - Set hook bolts on nominal 18" centers around pipe perimeter at center of headwall. Hook bolts conform to ASTM A307. Galvanize according to ASTM A153.
 - For installations with more than two pipe culverts, increase the dimension "L" and all quantities shown for double pipe installation by adding a length equal to dimension "B" and the incremental change in quantities for each additional pipe culvert.
 - For skews other than those shown, multiply quantities and dimensions "A", "B" & "L" for square headwalls by secant of the skew angle.
 - Final quantities will be determined by using the tables on this standard.
 - Do not order materials until the length, skew angle, and slope bevel in the field have been approved.

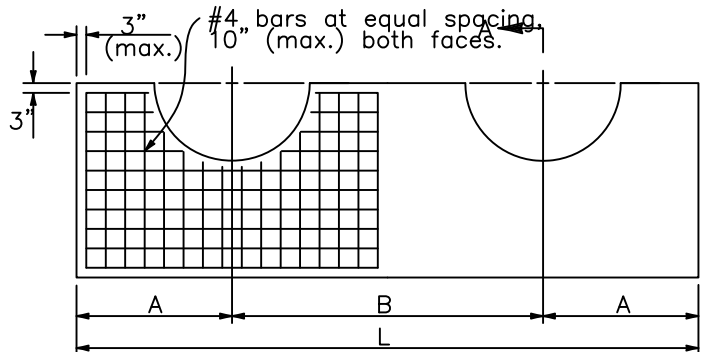
HEADWALL FOR SINGLE PIPE CULVERT													
DIMENSIONS, REINFORCING STEEL AND CONCRETE TABLE OF QUANTITIES													
D in	H ft	SQUARE HEADWALL			15° SKEW			30° SKEW			45° SKEW		
		L ft	CONC ft ³	STEEL lb	L ft	CONC ft ³	STEEL lb	L ft	CONC ft ³	STEEL lb	L ft	CONC ft ³	STEEL lb
47	4.9	7.9	32.1	108.0	8.2	33.2	116.8	9.2	37.1	130.1	11.2	45.2	154.3
53	5.2	9.2	39.2	130.1	9.8	40.6	141.1	10.8	45.2	152.1	13.1	55.4	183.0
59	5.4	10.5	46.6	156.5	10.8	48.4	156.5	12.1	53.7	176.4	15.1	65.7	213.8
65	5.7	11.8	54.4	200.6	12.1	56.5	196.2	13.5	62.9	213.8	16.7	77.0	264.6
71	5.9	13.1	62.9	213.8	13.5	65.0	218.3	15.1	72.4	246.9	18.4	88.6	297.6
77	6.2	14.1	69.6	229.3	14.8	72.0	240.3	16.4	80.5	266.8	20.3	98.5	330.7
83	6.4	15.4	78.8	273.4	16.1	91.6	277.8	18.0	91.1	317.5	22.0	111.2	385.8
89	6.6	16.7	87.2	297.6	17.4	90.4	308.6	19.4	101.0	341.7	23.6	123.6	423.3
95	6.9	18.0	98.5	330.7	18.7	101.7	341.7	20.7	113.7	374.8	25.6	139.1	465.2
100	7.1	19.4	108.8	374.8	20.0	112.7	388.0	22.3	125.7	436.5	27.2	154.0	531.3
106	7.4	20.3	117.6	407.8	21.3	121.5	425.5	23.6	135.6	471.8	28.9	166.0	573.2
112	7.6	21.7	132.4	429.9	22.6	137.0	447.5	25.3	152.9	509.3	30.8	187.2	612.9
118	7.9	23.0	140.6	463.0	23.9	145.5	480.6	26.6	162.4	533.5	32.5	198.8	645.9
124	8.1	24.3	154.7	515.9	25.3	160.0	542.3	27.9	178.7	597.4	34.1	218.6	723.1
130	8.4	25.6	165.3	555.6	26.6	171.3	573.2	29.5	191.1	643.7	36.1	233.8	784.8
136	8.6	26.9	178.3	595.2	27.9	184.7	612.9	30.8	206.2	670.2	37.7	252.1	828.9
142	8.9	27.9	189.3	645.9	28.9	196.0	665.8	32.5	218.6	749.6	39.7	267.7	919.3
148	9.1	29.2	203.1	679.0	30.2	210.1	709.9	33.8	234.5	793.7	41.3	287.1	972.2
154	9.4	30.5	217.5	723.1	31.5	225.3	740.7	35.1	251.4	833.3	43.3	307.6	1029.5
160	9.6	31.8	232.4	795.9	32.8	240.5	815.7	36.7	268.4	921.5	44.9	328.8	1124.3
166	9.8	33.1	247.6	833.3	34.1	256.4	853.2	38.1	286.0	959.0	46.6	350.3	1181.7
172	10.1	34.1	260.3	864.2	35.4	269.1	901.7	39.4	300.5	1009.7	48.6	368.0	1247.8
178	10.3	35.4	276.2	908.3	36.7	286.0	945.8	41.0	318.9	1058.2	50.2	390.6	1291.9



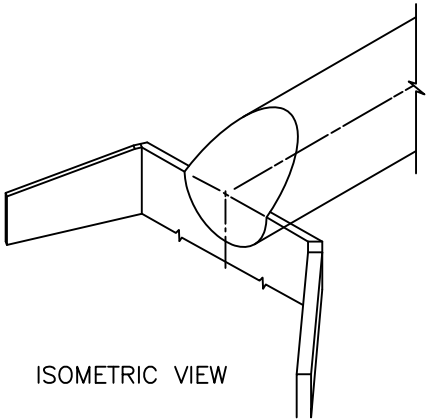
SINGLE PIPE CULVERT



SECTION A-A



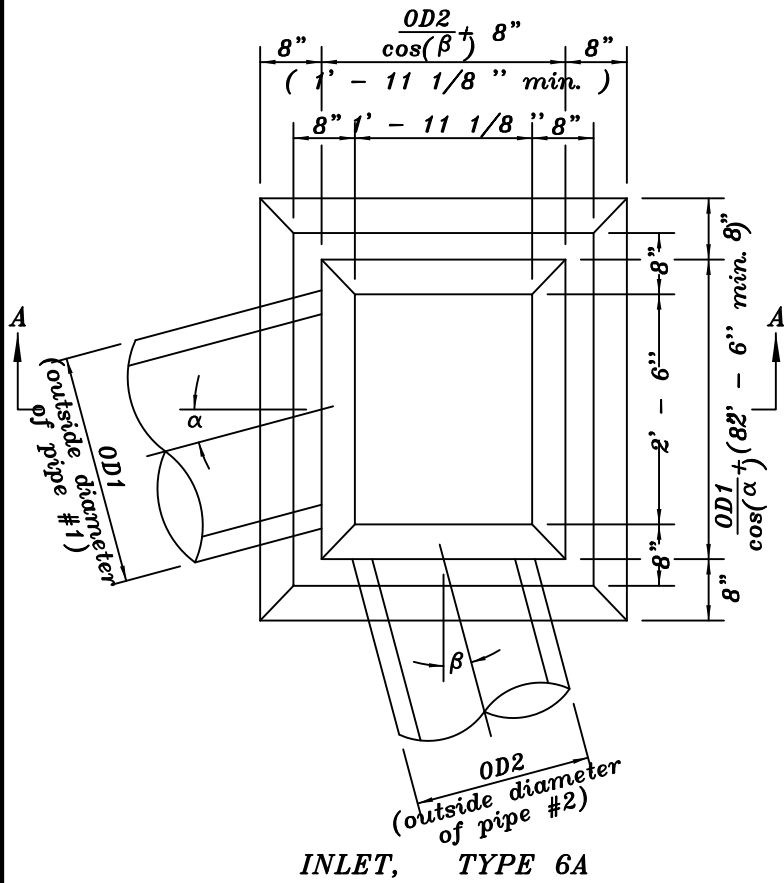
DOUBLE PIPE CULVERT
HEADWALLS



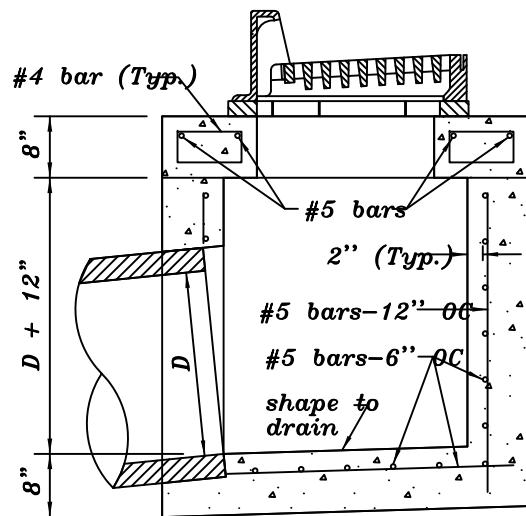
ISOMETRIC VIEW

NOT TO SCALE

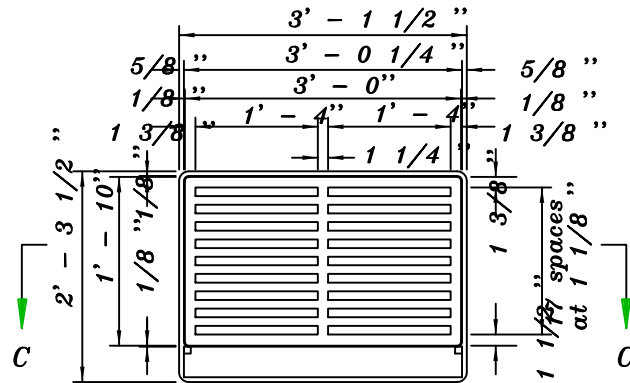
REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	G12	97



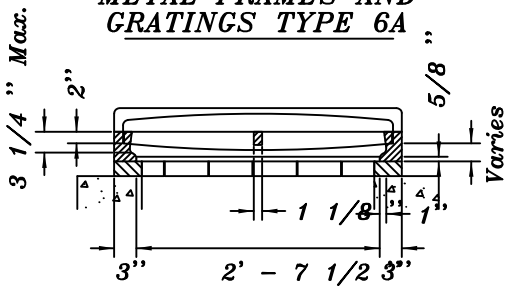
INLET, TYPE 6A



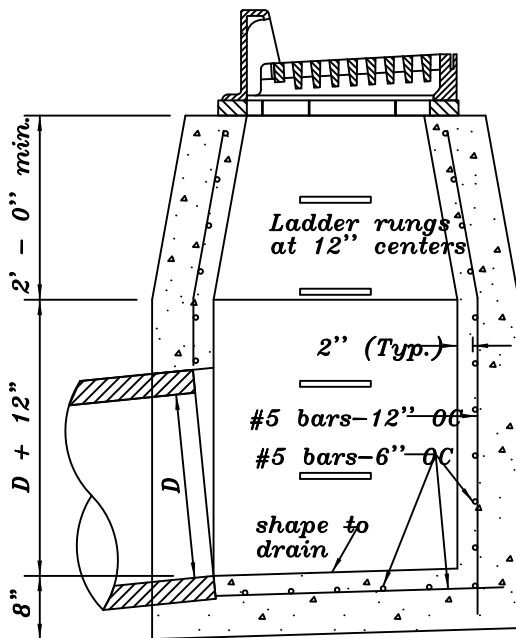
Limited Headroom
SECTION A-A



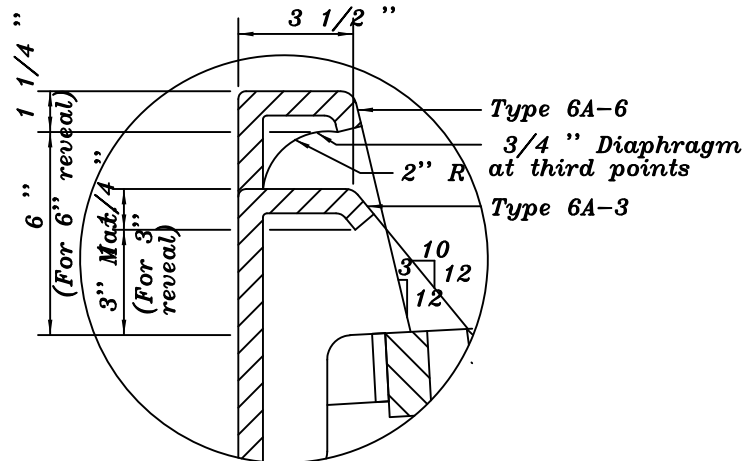
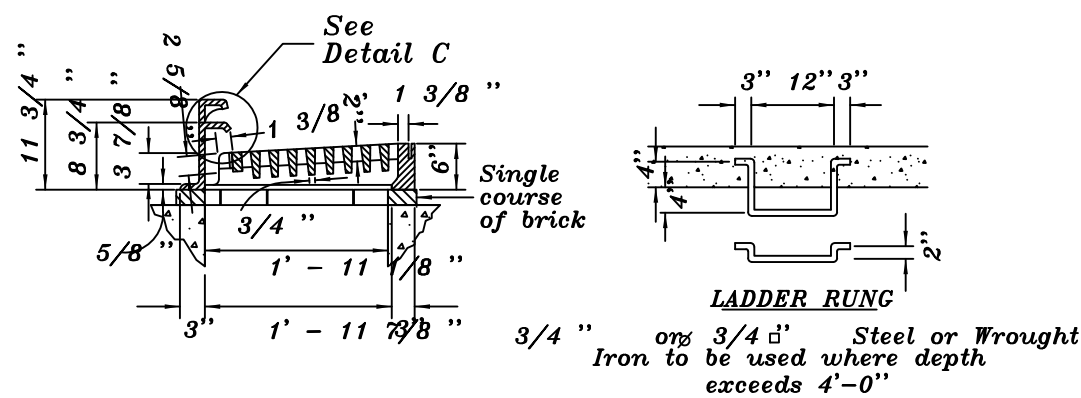
METAL FRAMES AND
GRATINGS TYPE 6A



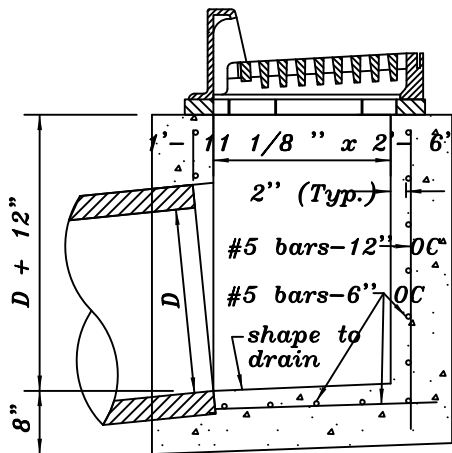
SECTION C-C



Ample Headroom
SECTION A-A



DETAIL C



For minimum inside inlet dimensions only
SECTION A-A

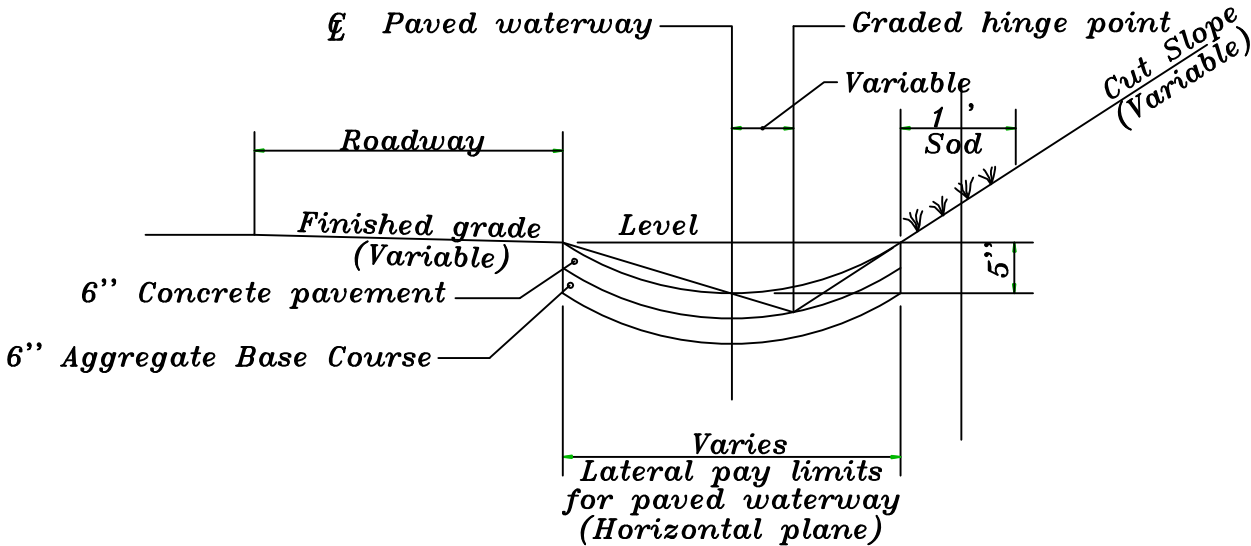
Notes:

- At the option of the Contractor walls less than 4 feet may be of concrete as shown.
- Construct Type A inlets for pipes 24 inch and larger "For Ample Headroom", unless otherwise directed by the CO.
- Construct inlets parallel to the roadway centerline and grade. Adapt inlets as directed by the CO.
- For frames and gratings minor variations in design and dimensions are permitted to allow manufacturers standards.

NOT TO SCALE

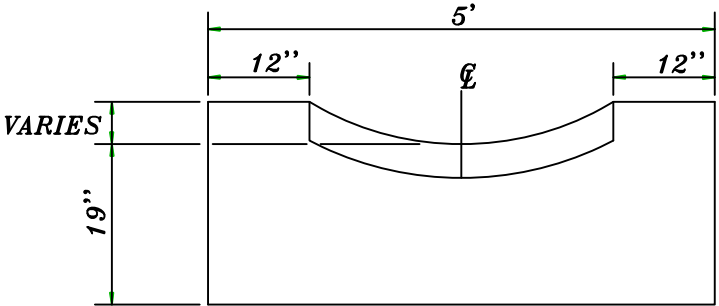
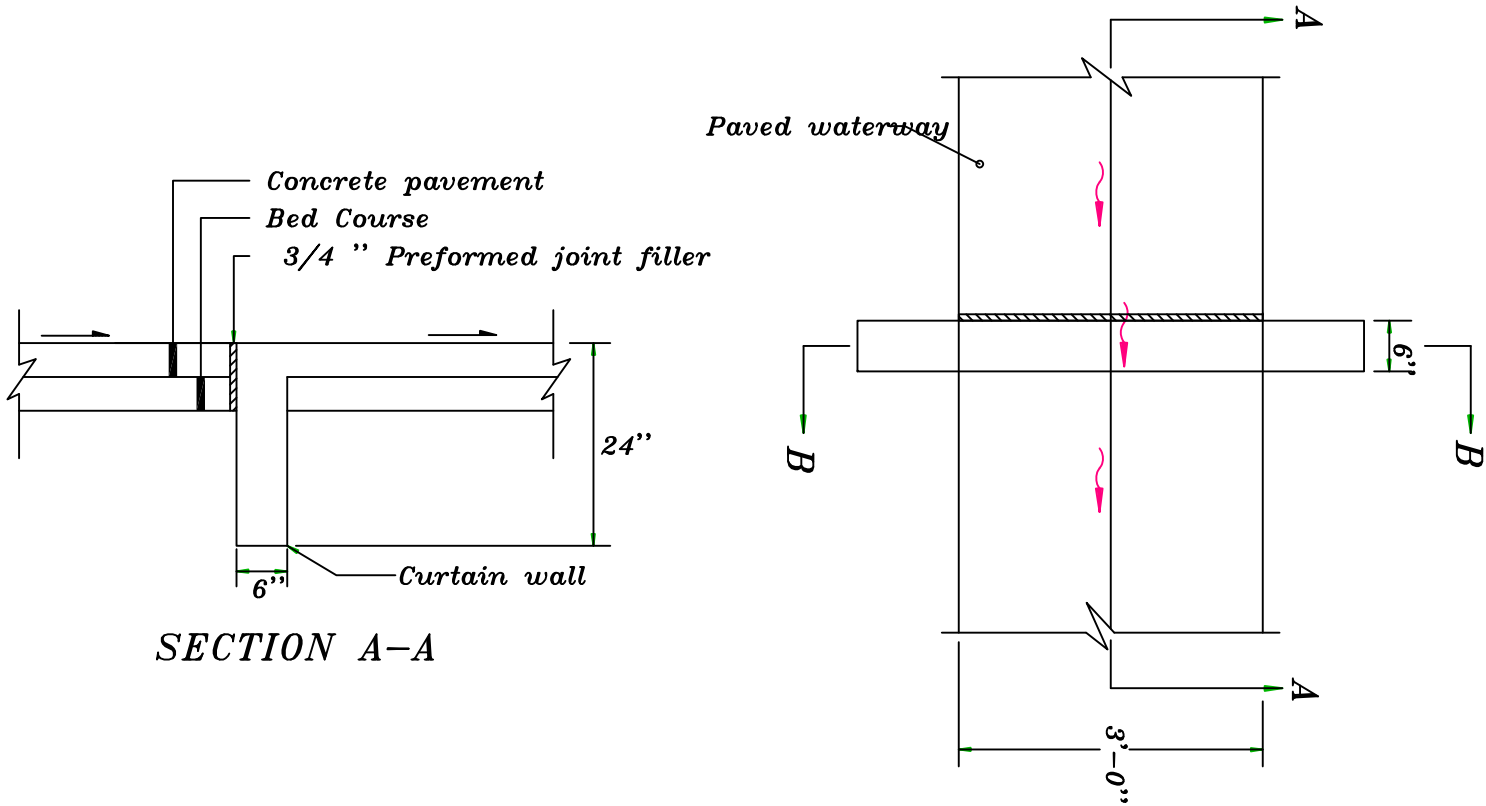
DEPARTMENT OF PUBLIC WORKS OFFICE OF HIGHWAY ENGINEERING	
DETAIL CURB INLET TYPE 6A WITH 3'X2' METAL FRAME & GRATE	
	DETAIL 60401(B)/(C)

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	G14	97



CONCRETE WATERWAY(TYPE IV)

- NOTES:
1. The approximate shape of the paved waterway is an arc with a radius of 2.9 feet.
 2. At inlets and other special locations, widen and shape paved waterway to drain.
 3. Construct concrete paved waterway in uniform sections 20 feet in length, except closure sections are not less than 5 feet in length. Place expansion joints, with curtain walls at 100 foot intervals.
 4. At the outlet end of each concrete paved waterway, construct a curtain wall on the downstream end of the last section of waterway.
 5. Excavation and 6" aggregate grading "C" will be subsidiary to item 60801.
 6. Use 4000psi Portland Cement Concrete with #1(6X6) W.W.M..



SECTION B-B

NOT TO SCALE

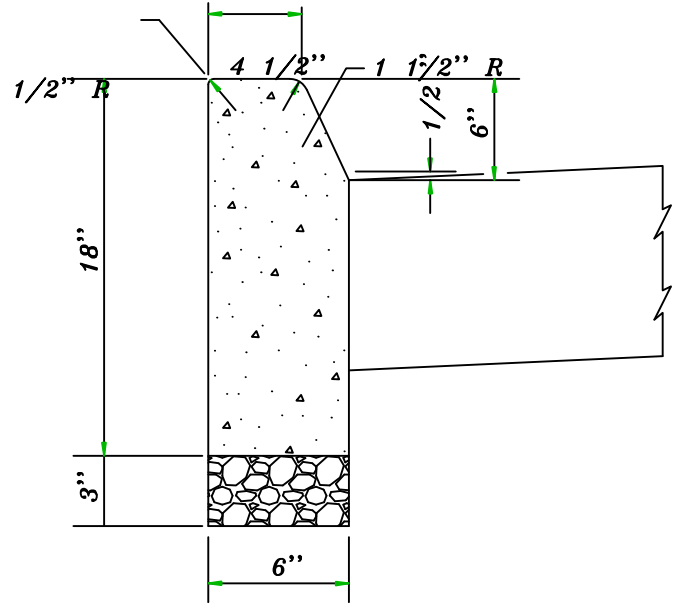
DEPARTMENT OF PUBLIC WORKS OFFICE OF HIGHWAY ENGINEERING	
DETAIL	
PAVED WATERWAY TYPE 4	
	DETAIL 60801-1

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	G15	97

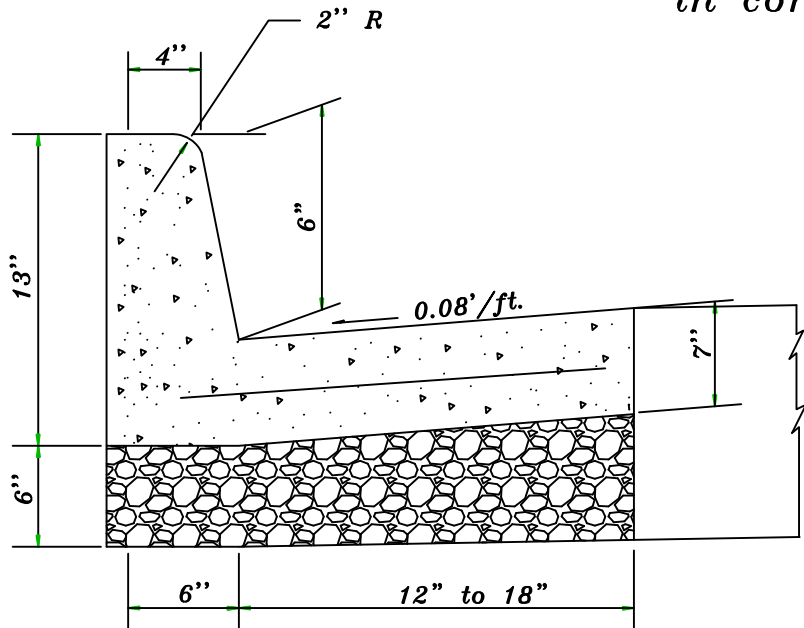
Note:

Place 6-inches, minimum aggregate grading "C" bed course under all curbs and gutters.

Place #1 w.w.m reinforcement in concrete gutter.



*18-INCH DEPTH
(NON-MOUNTABLE)
PORTLAND CEMENT CONCRETE CURB*

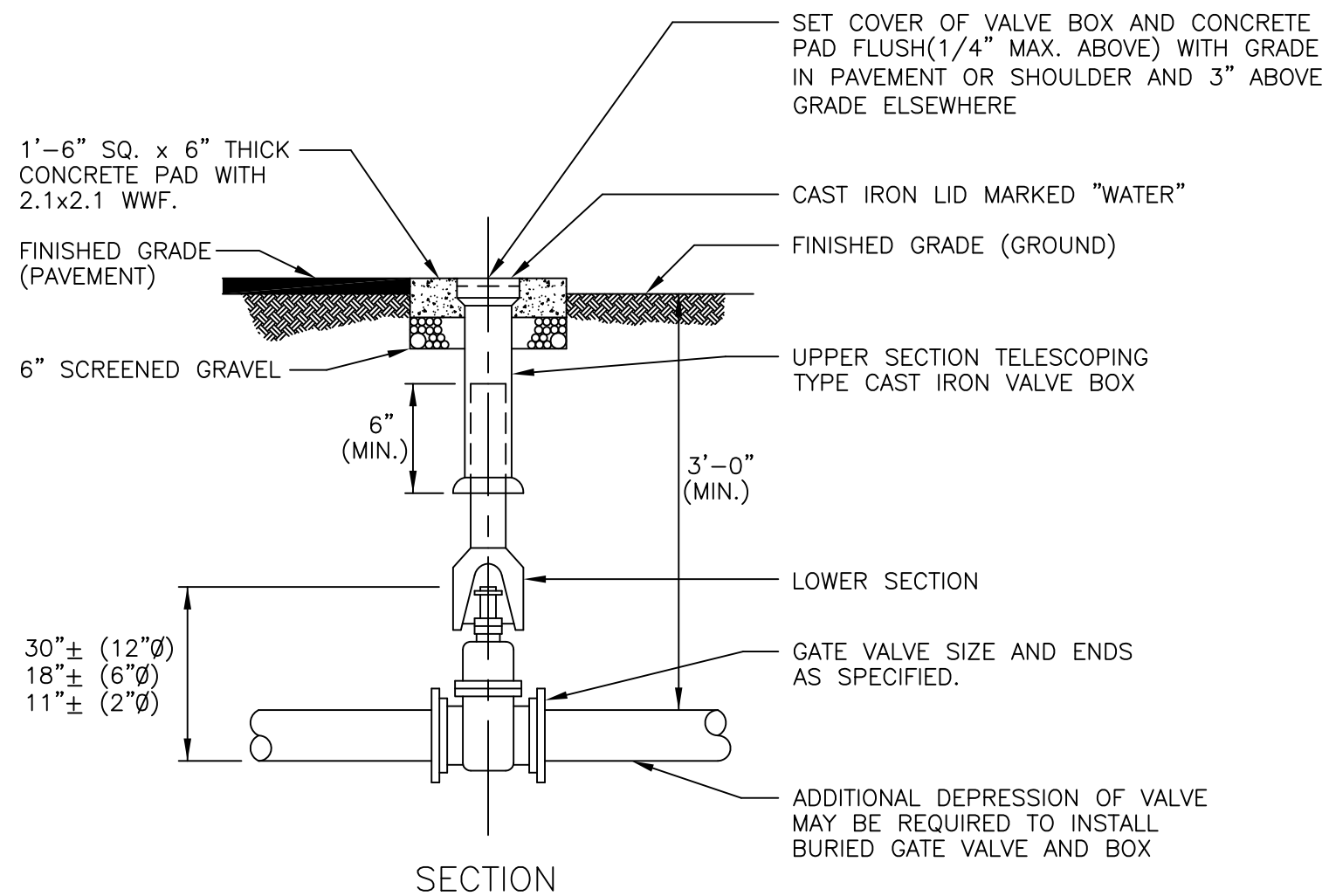


*13-INCH DEPTH
(NON-MOUNTABLE)
PORTLAND CEMENT CONCRETE CURB AND GUTTER*

NOT TO SCALE

DEPARTMENT OF PUBLIC WORKS OFFICE OF HIGHWAY ENGINEERING	
DETAIL	
CURB AND GUTTER	
	DETAIL 60901

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	G16	97



BURIED GATE VALVE & VALVE BOX DETAIL

NOT TO SCALE

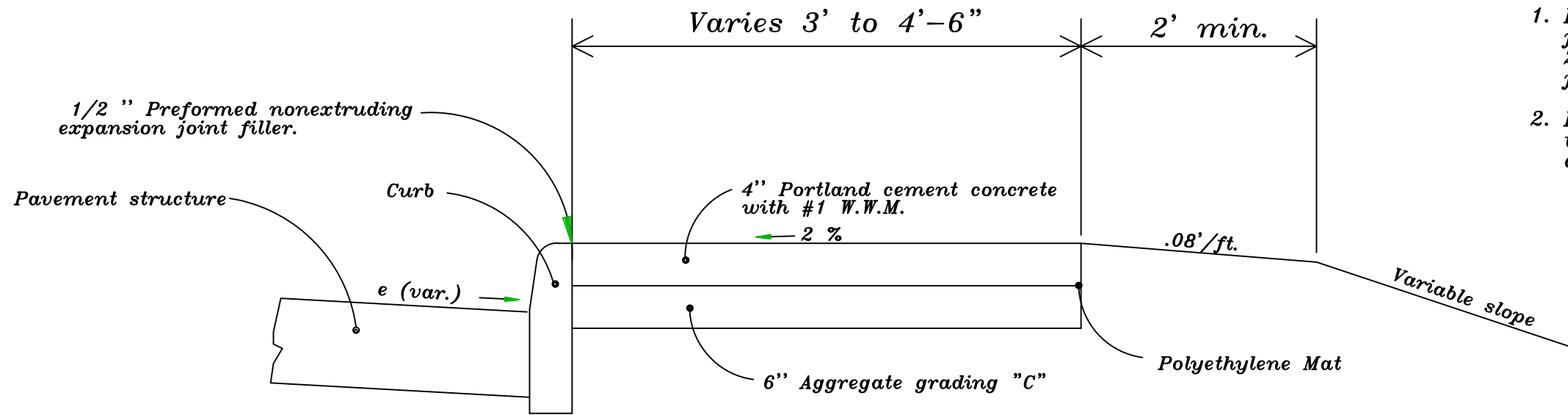
VIRGIN ISLANDS WATER AND POWER AUTHORITY
DEPARTMENT OF PUBLIC WORKS
OFFICE OF HIGHWAY ENGINEERING

DETAIL WATER VALVE ADJUSTMENT

Sheet No. 1

DETAIL
61101

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	G17	97



SIDEWALK WITH CURB

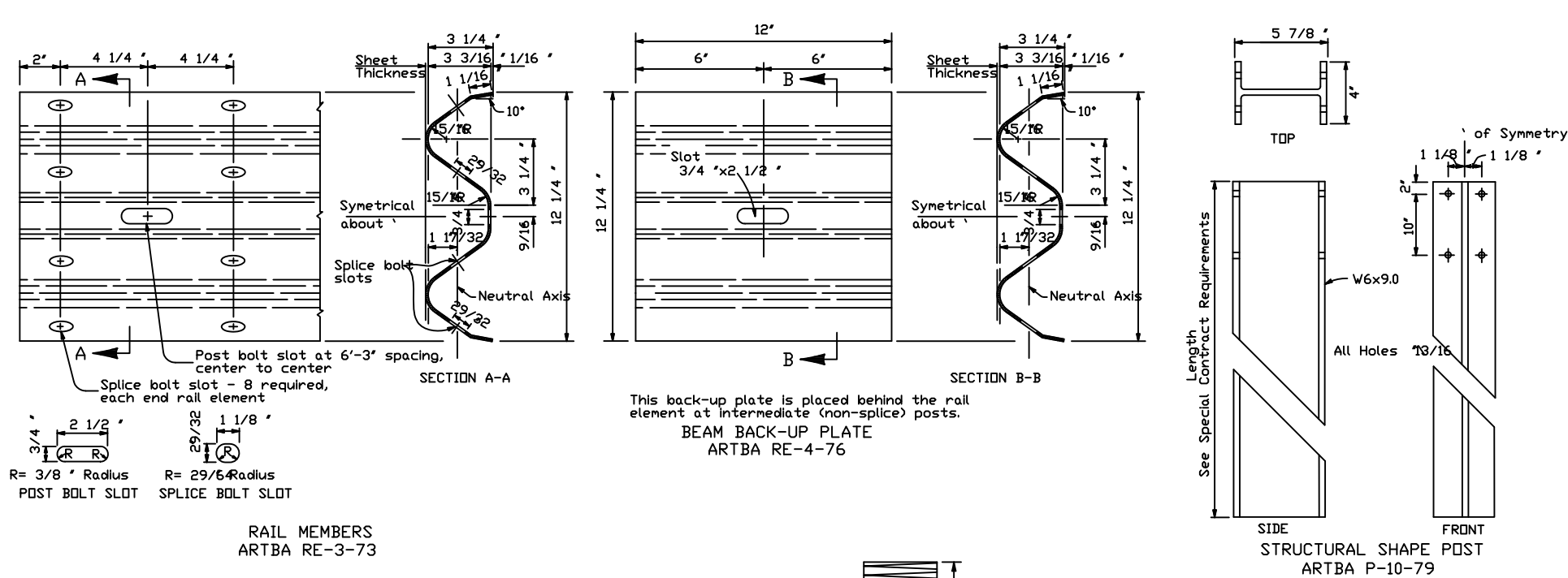
NOTES:

1. Place 3/4 -inch transverse expansion joints at intervals of not more than 200 feet to match adjacent curb expansion joints.
2. Place dummy joints at intervals equal to the width of the sidewalk as shown on the plans.

NOT TO SCALE

DEPARTMENT OF PUBLIC WORKS OFFICE OF HIGHWAY ENGINEERING	
DETAIL PORTLAND CEMENT CONCRETE SIDEWALK	
	DETAIL 61501

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	G18	97



ALTERNATE HOLE ARRANGEMENT
POST AND BLOCK DETAIL
RUBBER BLOCKOUT

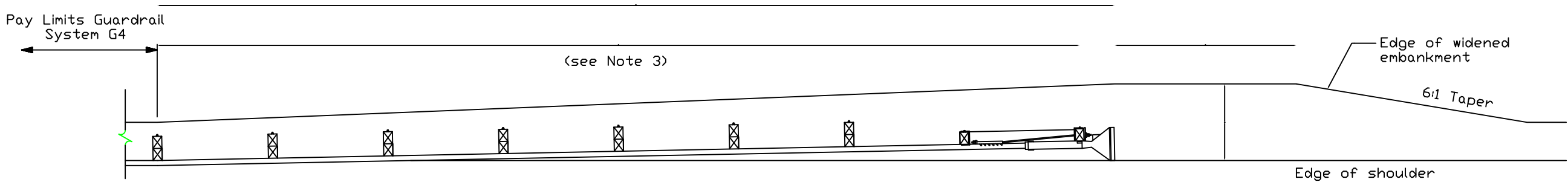
NOT TO SCALE

DEPARTMENT OF PUBLIC WORKS OFFICE OF HIGHWAY ENGINEERING	
DETAIL	
G4 W BEAM GUARDRAIL STEEL POSTS	
	DETAIL 61701(A)

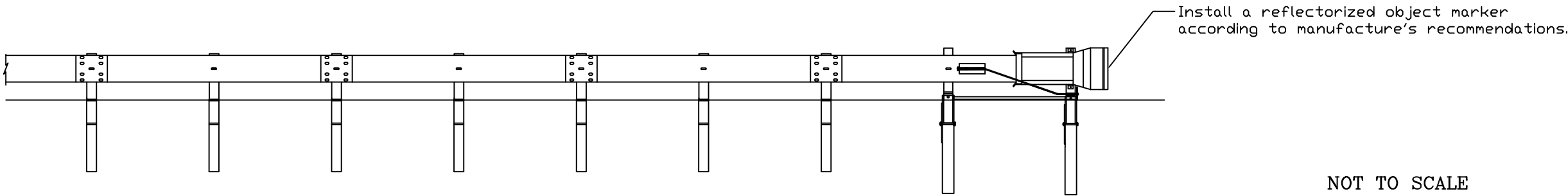
REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	G19	97

NOTES:

1. Unless otherwise specified in the contract, install a G4 W-beam guardrail terminal that meets NCHRP-350 OR 230 requirements. See <http://safety.fhwa.dot.gov/> for a list of approved terminal sections.
2. Unless otherwise indicated in the contract, install the terminal section as per manufacturer's recommendations.
3. Install terminal at a 1:50 taper, ensuring that end piece is entirely off shoulder..
4. See manufacturer's drawings for other details.



PLAN

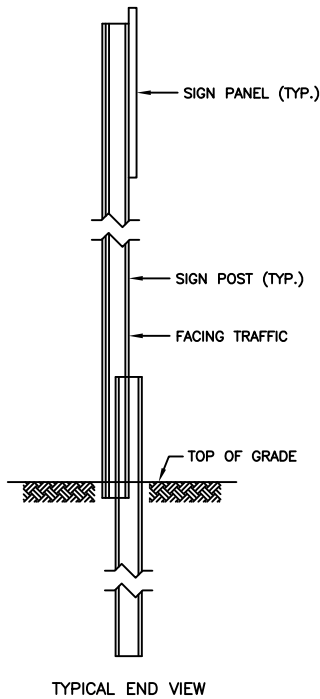
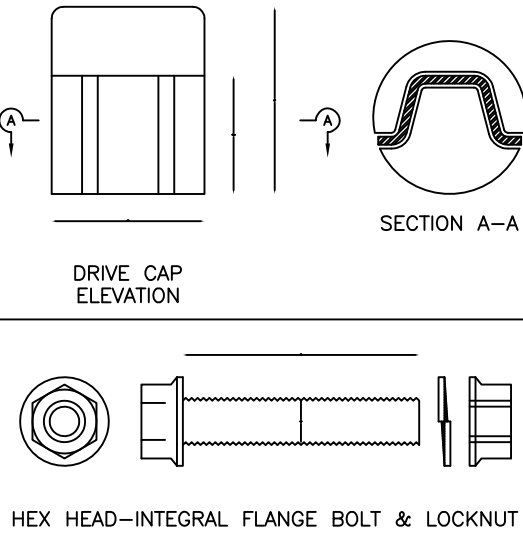
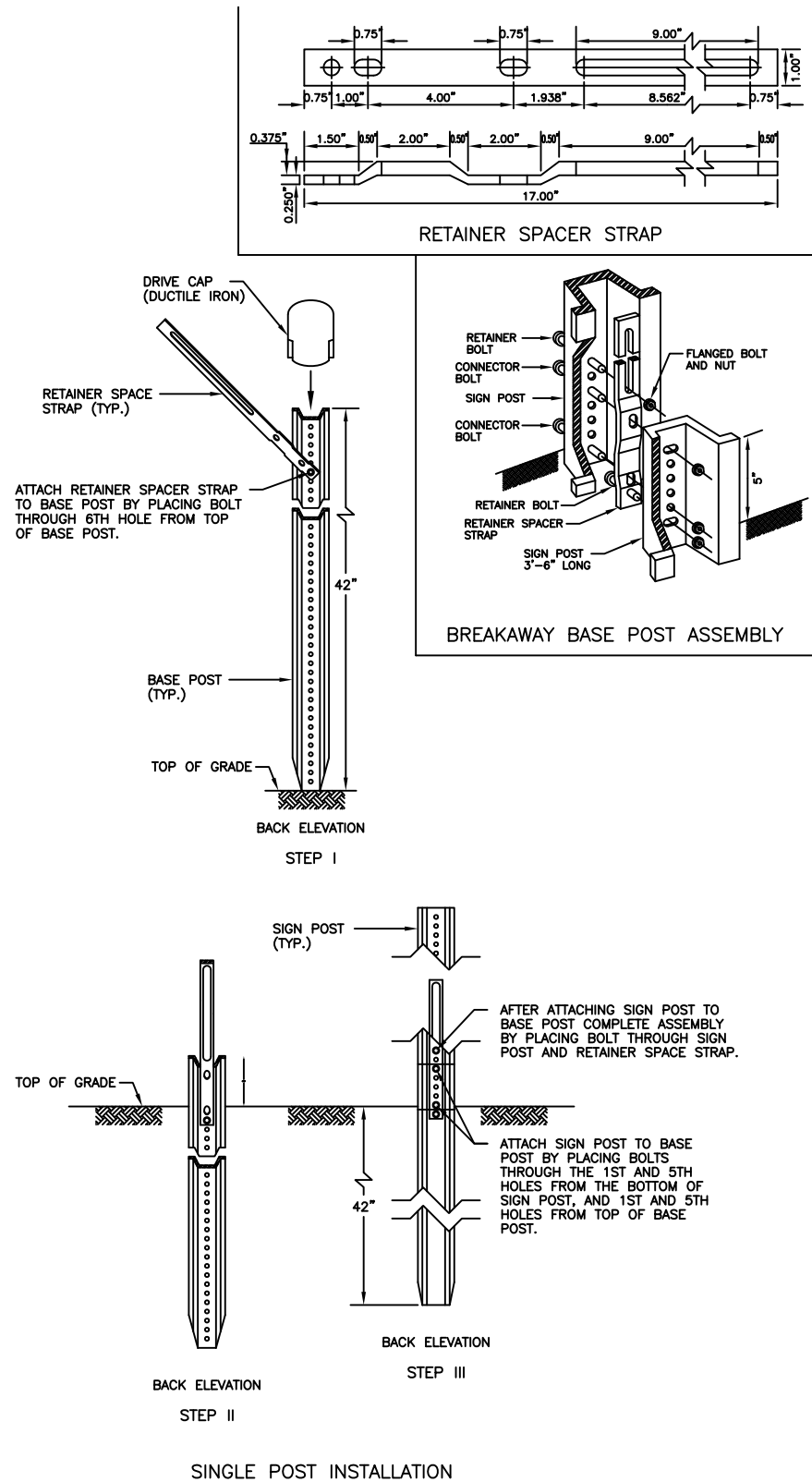


ELEVATION

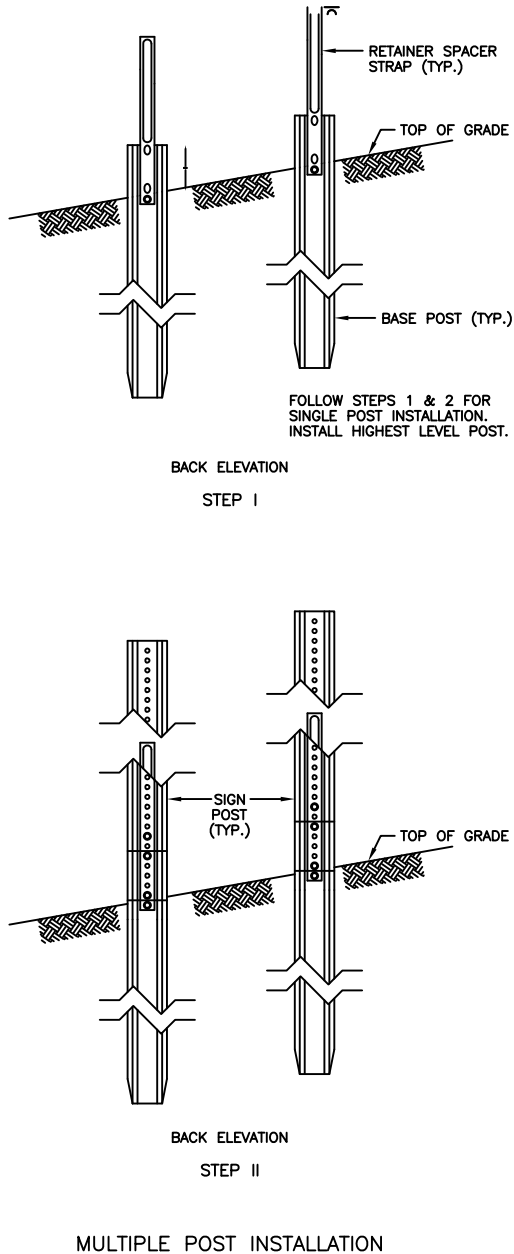
NOT TO SCALE

DEPARTMENT OF PUBLIC WORKS OFFICE OF HIGHWAY ENGINEERING	
DETAIL	
G4 W BEAM GUARDRAIL TANGENT TYPE TERMINAL	
	DETAIL 61701(B)

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	G20	97

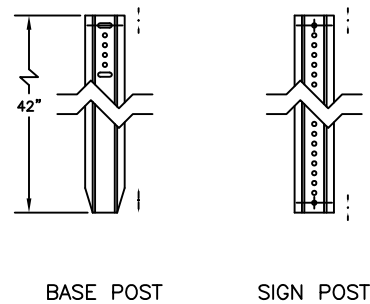


NOTE:
BASE POST MUST BE DRIVEN PLUMB
RECOMMENDED PROCEDURE IS TO DRIVE POST ABOUT 12 IN., STOP AND CHECK FOR STRAIGHTNESS, FRONT TO BACK, SIDE TO SIDE. MAKE ADJUSTMENTS, DRIVE POST AN ADDITIONAL 12-15 IN., REPEAT CHECK, MAKE FINAL ADJUSTMENTS, COMPLETE INSTALLATION OF BASE POST.
FIELD CHECK FOR LENGTH OF SIGN POST BEFORE FABRICATION.



GENERAL NOTES

1. BASE POST AND SIGN POST SHALL BE FLANGED CHANNEL SECTION, HOT ROLLED FROM HIGH STRENGTH STEEL MEETING REQUIREMENTS OF ASTM A499-76 SPECIFICATION, MODIFIED, IN THAT MATERIAL SHALL MEET MINIMUM YIELD STRESS OF 60,000 PSI AND MINIMUM TENSILE OF 90,000 PSI, OR EQUAL.
2. THE FINISH FOR BASE POST AND SIGN POST SHALL BE HOT DIP GALVANIZING MEETING REQUIREMENTS OF ASTM A123 SPECIFICATIONS. GALVANIZING SHALL BE APPLIED AFTER FABRICATION IS COMPLETED.
3. THE WEIGHT OF EACH BASE POST BEFORE PUNCHING SHALL BE 4.00 LB./FT. AS REQUIRED. WEIGHT TOLERANCE SHALL BE PLUS OR MINUS 3 1/2%. PUNCHING SHALL BE A MINIMUM OF 18 HOLES, 0.438 INCH DIAMETER ON 1 INCH CENTERS. FIRST HOLE TO BE 1 INCH FROM TOP OF POST AND BOTTOM OF POST SHALL BE POINTED. THE LENGTH OF EACH BASE POST SHALL BE 3.50 FEET. LENGTH TOLERANCE SHALL BE PLUS OR MINUS 1 INCH.
4. THE WEIGHT OF EACH SIGN POST BEFORE PUNCHING SHALL BE 4.00 LB./FT. AS REQUIRED. WEIGHT TOLERANCE SHALL BE PLUS OR MINUS 3 1/2%. PUNCHING SHALL BE A FULL LENGTH 0.438 INCH DIAMETER HOLES ON 1 INCH CENTERS. FIRST HOLE SHALL BE 1 INCH FROM TOP OF POST, LAST HOLE SHALL BE 1 INCH FROM BOTTOM. LENGTH OF SIGN POST SHALL BE IN INCREMENTS OF 1.00 FOOT, 6.00 FEET THRU 15.00 FEET, WITH A LENGTH TOLERANCE OF PLUS OR MINUS 1 INCH.
5. ALL POSTS SHALL BE MACHINE STRAIGHTENED AND HAVE A SMOOTH UNIFORM FINISH FREE FROM INJURIOUS DEFECTS AFFECTING STRENGTH OR APPEARANCE. BOLT HOLES OF 0.438 INCH DIAMETER SHALL BE CAREFULLY SPACED, VERTICALLY AND HORIZONTALLY, SO THAT HOLES WILL ALIGN FOR EASY ASSEMBLY. ALL BOLT HOLES AND SHEARED ENDS SHALL BE COMMERCIALY FREE FROM BURRS.
6. RETAINER-SPACER STRAP SHALL BE FABRICATED FROM AISI-1020 STEEL AND GALVANIZED TO ASTM 123 SPECIFICATION.
7. BOLTS AND NUTS SHALL BE HEX HEAD-INTEGRAL FLANGE TYPE AND GALVANIZED TO ASTM A123 SPECIFICATION.
 - A. BOLT = 3/8" - 16 UNC X 2.00"(FULLY THREADED)
 - B. NUT = SELF-LOCKING TYPE



NOT TO SCALE

DEPARTMENT OF PUBLIC WORKS
OFFICE OF HIGHWAY ENGINEERING

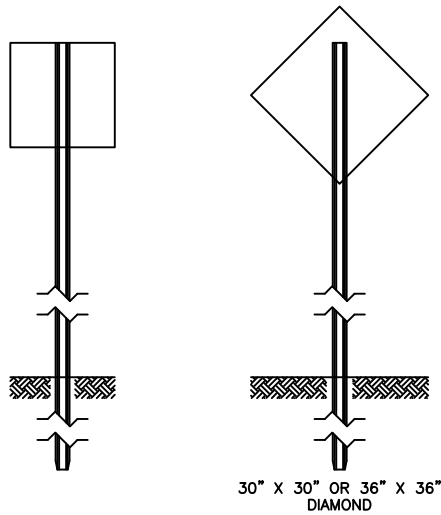
DETAIL

SIGN MOUNTING DETAIL

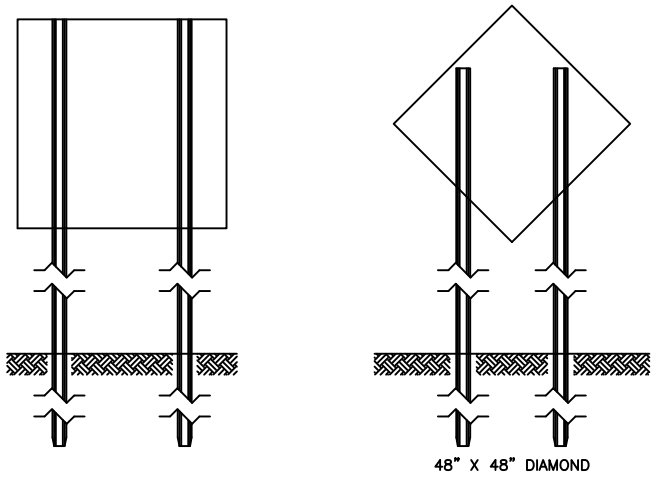
Sheet No. 1

DETAIL
63301

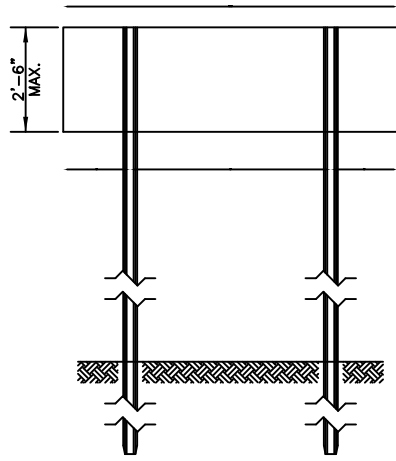
REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	G21	97



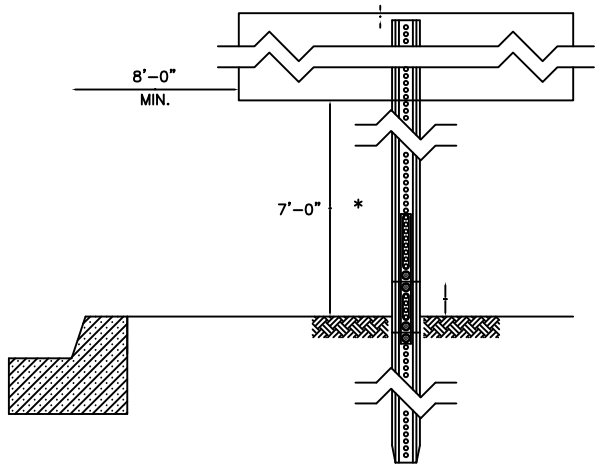
4.0 LB./FT. POST
TYPE I
MAX. SIGN AREA
10 SQ. FT.



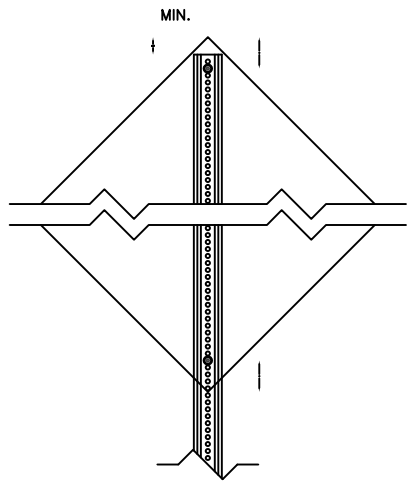
4.0 LB./FT. POSTS
TYPE II
MAX. SIGN AREA
21 SQ. FT.



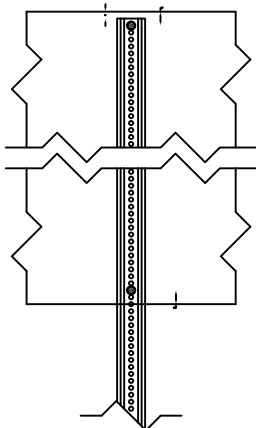
GUIDE SIGN
4.0 LB./FT. POSTS
TYPE III
MAX. SIGN AREA
20 SQ. FT.



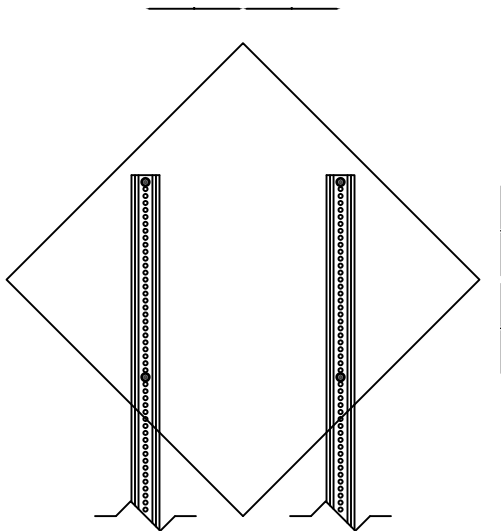
* - ABOVE TOP OF CURB OR EDGE OF PAVEMENT



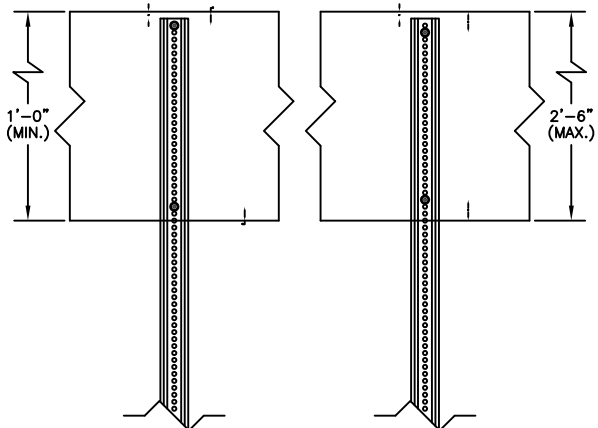
ELEVATION
FOR TYPE I DIAMOND SIGN



ELEVATION
FOR TYPE I AND TYPE II SIGNS
(OTHER THAN DIAMOND)



ELEVATION
FOR TYPE II DIAMOND SIGN



ELEVATION
FOR TYPE III GUIDE SIGN

NOT TO SCALE

DEPARTMENT OF PUBLIC WORKS
OFFICE OF HIGHWAY ENGINEERING

DETAIL

SIGN MOUNTING DETAIL

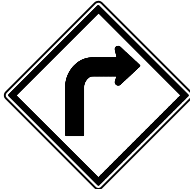
Sheet No. 2

DETAIL
63301

X - VARIES ACCORDING TO HOLE PUNCH ARRANGEMENT IN SIGN.

ROUTE 81 SIGN SUMMARY

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081<002>	G22	97

SIGN NO.	TEXT NO.	SIGN TEXT	LOCATION		PANEL SIZE						TEXT SIZE				COLOR COMBO	QUANTITY	TOTAL AREA (SQ FT)	SUPPORT (FT)	REMARKS
			STATION	SIDE	WIDTH (IN.)	HEIGHT (IN.)	AREA (SQ FT)	CORNER RADII (IN.)	BORDER WIDTH (IN.)	MARGIN WIDTH (IN.)	NUMBER (IN.)	UPPER CASE (IN.)	LOWER CASE (IN.)	SERIES					
1	R1-1				36	36				SEE NOTE 1					WHITE ON RED	21	189		
2	R2-1				24	30				SEE NOTE 1					BLACK ON WHITE	4	20		
3	R2-1				24	30				SEE NOTE 1					BLACK ON WHITE	4	20		
4	R2-1				24	30				SEE NOTE 1					BLACK ON WHITE	4	20		
5	S1-1				36	36				SEE NOTE 1					BLACK ON FLRYLWGN	4	36		
6	S4-2				24	10				SEE NOTE 1					BLACK ON FLRYLWGN	4	18		
7	S4-3				24	8				SEE NOTE 1					BLACK ON FLRYLWGN	4	8		
8	W1-1L				48	48				SEE NOTE 1					BLACK ON YELLOW	2	32		
9	W1-1R				48	48				SEE NOTE 1					BLACK ON YELLOW	2	32		
SUB-TOTAL (THIS SHEET)																49	365		

- NOTES:
- 1. SEE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION FOR SIGN DIMENSIONS.
 - 2. LOCATION OF SIGNS WILL BE AS DIRECTED BY THE CO.

DEPARTMENT OF PUBLIC WORKS
OFFCE OF HIGHWAY ENGINEERING

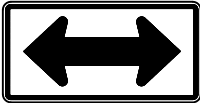
PERMANENT TRAFFIC
SIGNS

Sheet No. 3

DETAIL
63301(A)/(B)

ROUTE 81 SIGN SUMMARY

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081<002>	G23	97

SIGN NO.	TEXT NO.	SIGN TEXT	LOCATION		PANEL SIZE						TEXT SIZE				COLOR COMBO	QUANTITY	TOTAL AREA (SQ FT)	SUPPORT (FT)	REMARKS
			STATION	SIDE	WIDTH (IN.)	HEIGHT (IN.)	AREA (SQ FT)	CORNER RADII (IN.)	BORDER WIDTH (IN.)	MARGIN WIDTH (IN.)	NUMBER (IN.)	UPPER CASE (IN.)	LOWER CASE (IN.)	SERIES					
10	W1-2R				48	48				SEE NOTE 1					BLACK ON YELLOW	4	64		
11	W1-2L				48	48				SEE NOTE 1					BLACK ON YELLOW	4	64		
12	W1-7				48	24				SEE NOTE 1					BLACK ON YELLOW	1	8		
13	W1-8				30	36				SEE NOTE 1					BLACK ON YELLOW	12	96		
14	W11A-2				48	48				SEE NOTE 1					BLACK ON FLRYLW	4	64		
15	W16-7P				24	12				SEE NOTE 1					BLACK ON FLRYLWGN	2	4		
16	W16-9P				24	8				SEE NOTE 1					BLACK ON FLRYLWGN	4	8		
17	OM-3L				18	36				SEE NOTE 1					BLACK ON YELLOW	4	18		
SUB-TOTAL (THIS SHEET)																35	326		

- NOTES:
- 1. SEE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION FOR SIGN DIMENSIONS.
 - 2. LOCATION OF SIGNS WILL BE AS DIRECTED BY THE CO.

DEPARTMENT OF PUBLIC WORKS
OFFCE OF HIGHWAY ENGINEERING

PERMANENT TRAFFIC
SIGNS

Sheet No. 4

DETAIL
63301(A)/(B)

ROUTE 81 SIGN SUMMARY

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081<002>	G24	97

SIGN NO.	TEXT NO.	SIGN TEXT	LOCATION		PANEL SIZE						TEXT SIZE				COLOR COMBO	QUANTITY	TOTAL AREA (SQ FT)	SUPPORT (FT)	REMARKS
			STATION	SIDE	WIDTH (IN.)	HEIGHT (IN.)	AREA (SQ FT)	CORNER RADII (IN.)	BORDER WIDTH (IN.)	MARGIN WIDTH (IN.)	NUMBER (IN.)	UPPER CASE (IN.)	LOWER CASE (IN.)	SERIES					
18	M1-5				24	24	←————→			SEE NOTE 1					BLACK ON WHITE	5	20		
19	M1-5				24	24	←————→			SEE NOTE 1					BLACK ON WHITE	2	8		
20	M1-5				24	24	←————→			SEE NOTE 1					BLACK ON WHITE	10	40		
21	M1-5				30	24	←————→			SEE NOTE 1					BLACK ON WHITE	1	5		
22	M1-5				24	24	←————→			SEE NOTE 1					BLACK ON WHITE	2	8		
23	M2-1				21	15	←————→			SEE NOTE 1					BLACK ON WHITE	6	12		
24	M3-1				24	12	←————→			SEE NOTE 1					BLACK ON WHITE	6	10		
25	M3-3				24	12	←————→			SEE NOTE 1					BLACK ON WHITE	4	8		
SUB-TOTAL (THIS SHEET)																36	111		

NOTES:

- 1. SEE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION FOR SIGN DIMENSIONS.
- 2. LOCATION OF SIGNS WILL BE AS DIRECTED BY THE CO.

DEPARTMENT OF PUBLIC WORKS
OFFCE OF HIGHWAY ENGINEERING

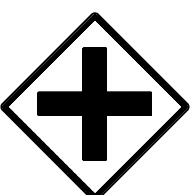
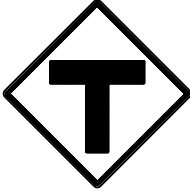
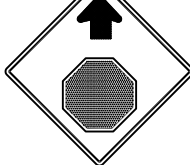
PERMANENT TRAFFIC
SIGNS

Sheet No. 5

DETAIL
63301(A)/(B)

ROUTE 81 SIGN SUMMARY

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081<002>	G25	97

SIGN NO.	TEXT NO.	SIGN TEXT	LOCATION		PANEL SIZE						TEXT SIZE				COLOR COMBO	QUANTITY	TOTAL AREA (SQ FT)	SUPPORT (FT)	REMARKS
			STATION	SIDE	WIDTH (IN.)	HEIGHT (IN.)	AREA (SQ FT)	CORNER RADII (IN.)	BORDER WIDTH (IN.)	MARGIN WIDTH (IN.)	NUMBER (IN.)	UPPER CASE (IN.)	LOWER CASE (IN.)	SERIES					
26	M6-1				21	15				SEE NOTE 1					BLACK ON WHITE	6	12		
27	M6-3				21	15				SEE NOTE 1					BLACK ON WHITE	5	12		
28	M6-4				21	15				SEE NOTE 1					BLACK ON WHITE	6	12		
29	M6-6L				21	15				SEE NOTE 1					BLACK ON WHITE	1	2		
30	M6-6R				21	15				SEE NOTE 1					BLACK ON WHITE	1	2		
31	W2-1				48	48				SEE NOTE 1					BLACK ON YELLOW	4	64		
32	W2-4				48	48				SEE NOTE 1					BLACK ON YELLOW	2	32		
33	W3-1				48	48				SEE NOTE 1					BLACK/RED ON YELLOW	1	16		
34	W8-2				36	36				SEE NOTE 1					BLACK ON YELLOW	2	18		
SUB-TOTAL (THIS SHEET)																28	170		
TOTAL																148	972		

- NOTES:
- 1. SEE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION FOR SIGN DIMENSIONS.
 - 2. LOCATION OF SIGNS WILL BE AS DIRECTED BY THE CO.

DEPARTMENT OF PUBLIC WORKS
OFFCE OF HIGHWAY ENGINEERING

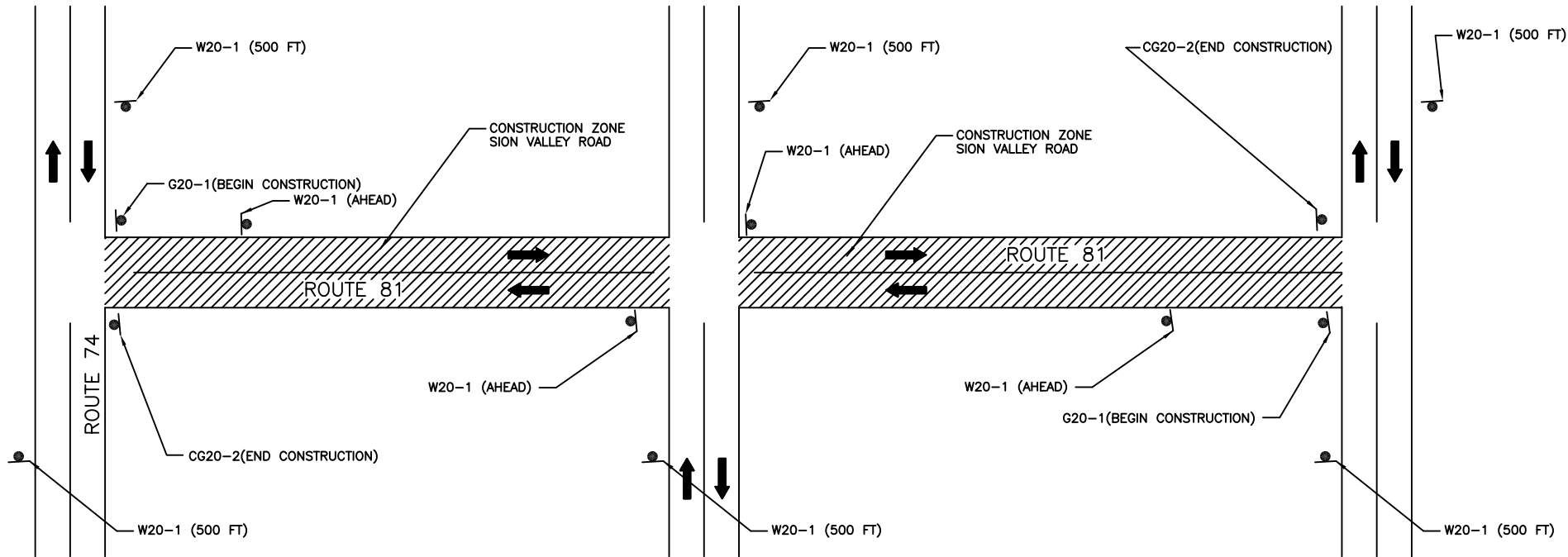
PERMANENT TRAFFIC
SIGNS

Sheet No. 6

DETAIL
63301(A)/(B)

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	G27	97

TYPICAL APPLICATION: PROJECT LIMIT SIGNS TWO WAY, TWO LANE ROADWAY



ALL GENERAL NOTES SHOWN BELOW SHALL APPLY TO ALL OF THE SHEETS TITLED "TRAFFIC CONTROL FOR CONSTRUCTION WORK ZONE"

- (A) ON CONSTRUCTION PROJECTS IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO INSTALL THE NECESSARY SIGNS BEFORE CONSTRUCTION BEGINS.
- (B) ALL SIGN BLANK MATERIALS USED SHALL BE SHEET METAL OR EQUIVALENT MATERIAL CONFORMING TO SECTION 718 OF F.H.W.A. SPECIFICATION "FP-14".
- (C) THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL SIGNS TO ASSURE A HIGH DEGREE OF BOTH DAY AND NIGHT VISIBILITY, WHICH WILL INCLUDE ANY WASHING, REPLACEMENT AND/OR RE-POSTIONING WHERE DEEMED NECESSARY BY THE ENGINEER.
- (D) REFLECTORIZATION OF TRAFFIC CONTROL DEVICES SHALL BE BY MEANS OF TYPE III REFLECTIVE SHEETING MEETING THE REQUIREMENTS OF SECTION 718 OF THE STANDARD SPECIFICATIONS, FP-14.
- (E) ALL SIGNS SHALL BE SECURELY PLACED OR WEIGHTED TO PREVENT BLOWING OVER. ROCKS, BROKEN CONCRETE OR OTHER SUCH OBJECTS SHALL NOT BE CONSIDERED ACCEPTABLE FOR SIGN SUPPORT.
- (F) SPACING OF SIGNING SHALL BE NO LESS THAN THE DISTANCES SHOWN. THE DISTANCE BETWEEN SIGNS SHOULD BE INCREASED ON HIGH SPEED, OR MORE HEAVILY TRAVELED HIGHWAYS, OR WHERE SIGHT DISTANCE IS RESTRICTED.
- (G) ALL SIGNS, FLASHERS, PADDLES, ETC. SHALL CONFORM IN SIZE, SHAPE, COLOR, LEGEND AND APPLICATIONS TO THE STANDARDS SET FORTH IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND/OR THE STANDARD SPECIFICATIONS.
- (H) ALL DIAMOND SHAPED CONSTRUCTION WARNING SIGNS SHALL BE 48" X 48", WITH 24" X 24" ADVISORY SPEED SIGNS WHERE REQUIRED.
- (I) REFLECTORIZATION OF TUBULAR MARKERS SHALL BE A MINIMUM OF TWO, THREE-INCH-WIDE WHITE BANDS PLACED A MAXIMUM OF 2 INCHES FROM THE TOP WITH A MAXIMUM OF 6 INCHES BETWEEN THE BANDS. RETROREFLECTION OF CONES SHALL BE PROVIDED BY A MINIMUM 6-INCH-WIDE WHITE BAND PLACED A MINIMUM OF 3 INCHES BUT NO MORE THAN 4 INCHES FROM THE TOP. WHEN THE 28-INCH OR LARGER SIZE CONES ARE USED, THE STANDARD 6-INCH BAND SHALL BE SUPPLEMENTED WITH AN ADDITIONAL 4-INCH WHITE BAND SPACED A MINIMUM OF 2 INCHES BELOW THE 6-INCH BAND.
- (J) THE CONTRACTOR SHALL REPAIR OR REPLACE ANY NEW OR EXISTING PERMANENT GOVERNMENT OWNED SIGNS WHICH ARE DAMAGED DUE TO HIS NEGLIGENCE OR CARELESS HANDLING DURING THE CONSTRUCTION OF THIS PROJECT. THIS SHALL BE DONE AT THE CONTRACTORS EXPENSE.
- (K) TRAFFIC CONDITIONS MAY NECESSITATE CHANGES IN THE USE AND/OR QUANTITIES OF THE TRAFFIC CONTROL DEVICES AS SHOWN IN THE PLANS. ANY SUCH CHANGES ARE SUBJECT TO THE APPROVAL OF THE ENGINEER.
- (L) ALL CHANNELIZING DEVICES INITIALLY PROVIDED ON THIS PROJECT SHALL BE EITHER NEW OR IN LIKE NEW CONDITION AND SHALL BE APPROVED FOR USE ON THIS PROJECT BY THE ENGINEER.
- (M) THE ADVISORY SPEED LIMITS THROUGH THE WORK ZONE MAY BE ADJUSTED AT THE DISCRETION OF THE ENGINEER.
- (N) WHENEVER THE TRAFFIC CONTROL PLAN REQUIRES DETOURING OF TRAFFIC, THE TRAFFIC DETOUR PLAN SHALL NOT BE IMPLEMENTED DURING PEAK TRAFFIC HOURS. PEAK TRAFFIC HOURS ARE BETWEEN 7:00AM TO 9:00AM AND BETWEEN 3:30PM TO 6:00PM.
- (O) ALL TEMPORARY TRAFFIC CONTROL FUNCTIONS SHALL CONFORM TO THE MUTCD FOR THE CONTROL AND PROTECTION OF THE PUBLIC TRAFFIC.

SEE TYPICAL TRAFFIC CONTROL DETAILS(63501 TC-2 AND 63501 TC-3).

PHASE ONE – EXCAVATION FOR DRAINAGE IMPROVEMENTS

- A) FLAGGING OPERATION WILL BE REQUIRED AT ALL TIMES DURING CONSTRUCTION.
- B) FLAGGERS WITH TWO-WAY RADIO COMMUNICATION WILL BE REQUIRED.
- C) COMBINATION OF DRUMS, BARRICADES, AND CONES WILL BE REQUIRED.

PHASE TWO – ROADWAY RECONSTRUCTION, RECONDITIONING, AND WIDENING

- A) FLAGGING OPERATION WILL BE REQUIRED AT ALL TIMES DURING CONSTRUCTION.
- B) FLAGGERS WITH TWO-WAY RADIO COMMUNICATION WILL BE REQUIRED.
- C) COMBINATION OF DRUMS, BARRICADES, AND CONES WILL BE REQUIRED.
- D) CONTRACTOR MAY BE LIMITED ON THE LENGTH OF ROADWAY ALLOWED

PHASE THREE – HANDRAIL, WATERWAY, AND SIDEWALK CONSTRUCTION

- A) FLAGGING OPERATION WILL BE REQUIRED AT ALL TIMES DURING CONSTRUCTION.
- B) FLAGGERS WITH TWO-WAY RADIO COMMUNICATION WILL NOT BE REQUIRED.
- C) COMBINATION OF DRUMS AND CONES WILL BE REQUIRED.
- D) ROAD AND SHOULDER WORK SIGNS WILL BE REQUIRED.

PHASE FOUR – ASPHALT OVERLAY AND STRIPING

- A) FLAGGING OPERATION WILL BE REQUIRED AT ALL TIMES DURING CONSTRUCTION.
- B) FLAGGERS WITH TWO-WAY RADIO COMMUNICATION WILL BE REQUIRED.
- C) COMBINATION OF DRUMS AND CONES WILL BE REQUIRED.
- D) UNEVEN PAVEMENT SIGNS WILL BE REQUIRED.

DEPARTMENT OF PUBLIC WORKS
OFFICE OF HIGHWAY ENGINEERING

DETAIL

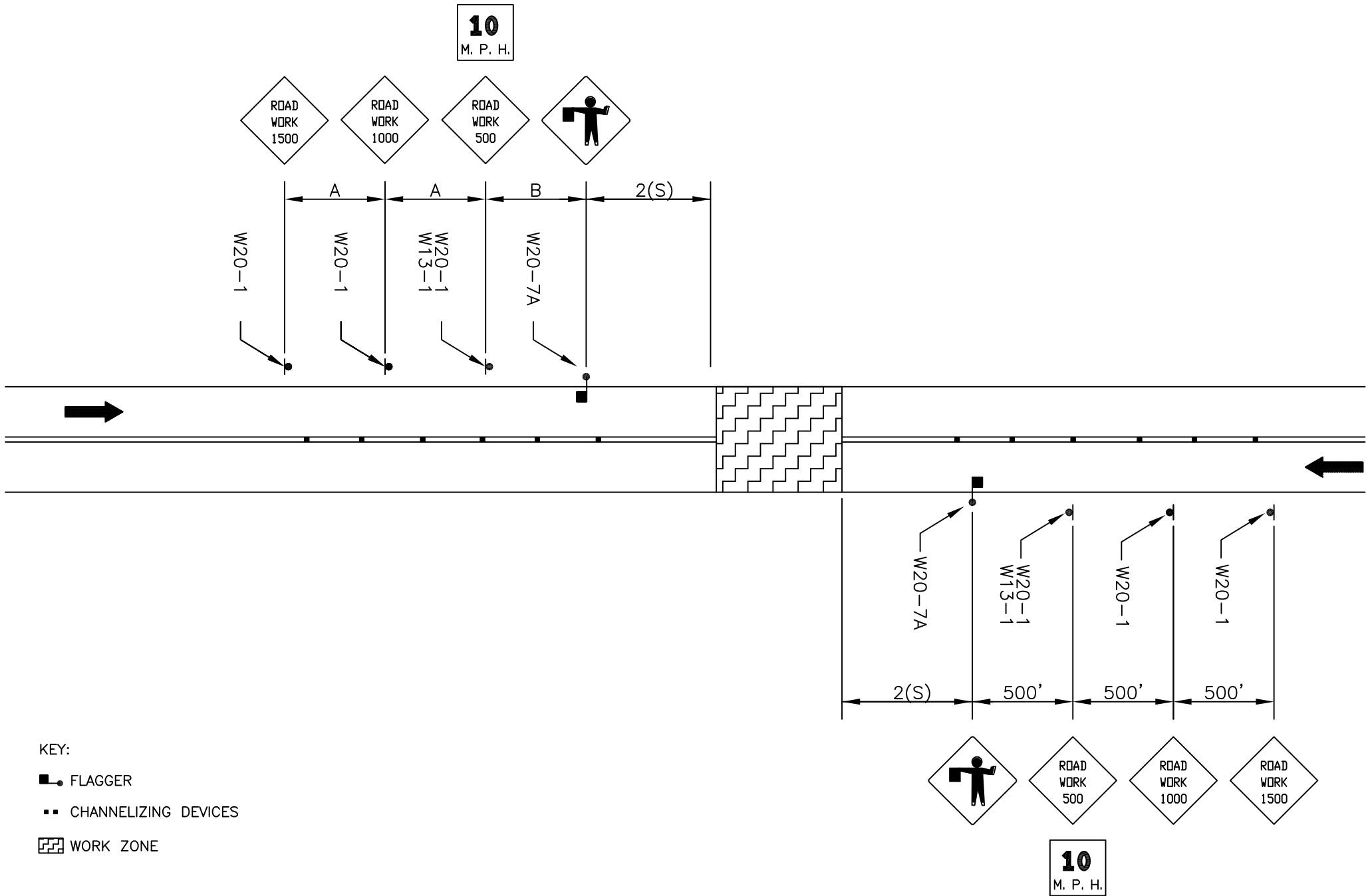
TRAFFIC CONTROL FOR
CONSTRUCTION WORK ZONE

Sheet No. TC-1

DETAIL
63501

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	G28	97

NOTES:
1. DUE TO THE VERY LOW ADT OF THIS ROADWAY, TRAFFIC CONTROL SHALL BE SET UP IN A MANNER FOR SAFE SELF REGULATED TRAFFIC AFTER WORKING HOURS.

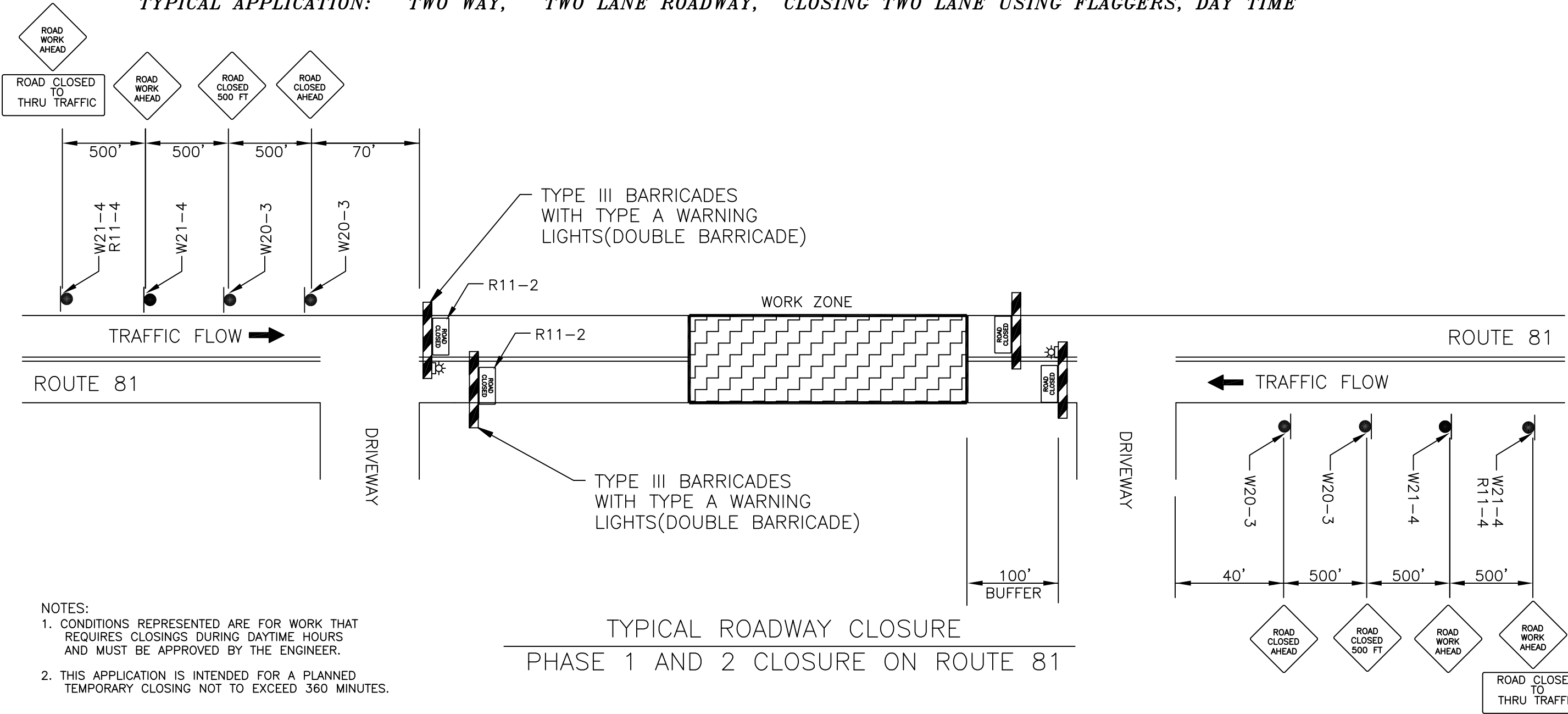


TEMPORARY TRAFFIC CONTROL

DEPARTMENT OF PUBLIC WORKS OFFICE OF HIGHWAY ENGINEERING	
DETAIL	
TRAFFIC CONTROL FOR CONSTRUCTION WORK ZONE	
Sheet No. <u>TC-2</u>	DETAIL 63501

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	G29	97

TYPICAL APPLICATION: TWO WAY, TWO LANE ROADWAY, CLOSING TWO LANE USING FLAGGERS, DAY TIME



- KEY:
- FLAGGER
 - CHANNELIZING DEVICES
 - WORK ZONE

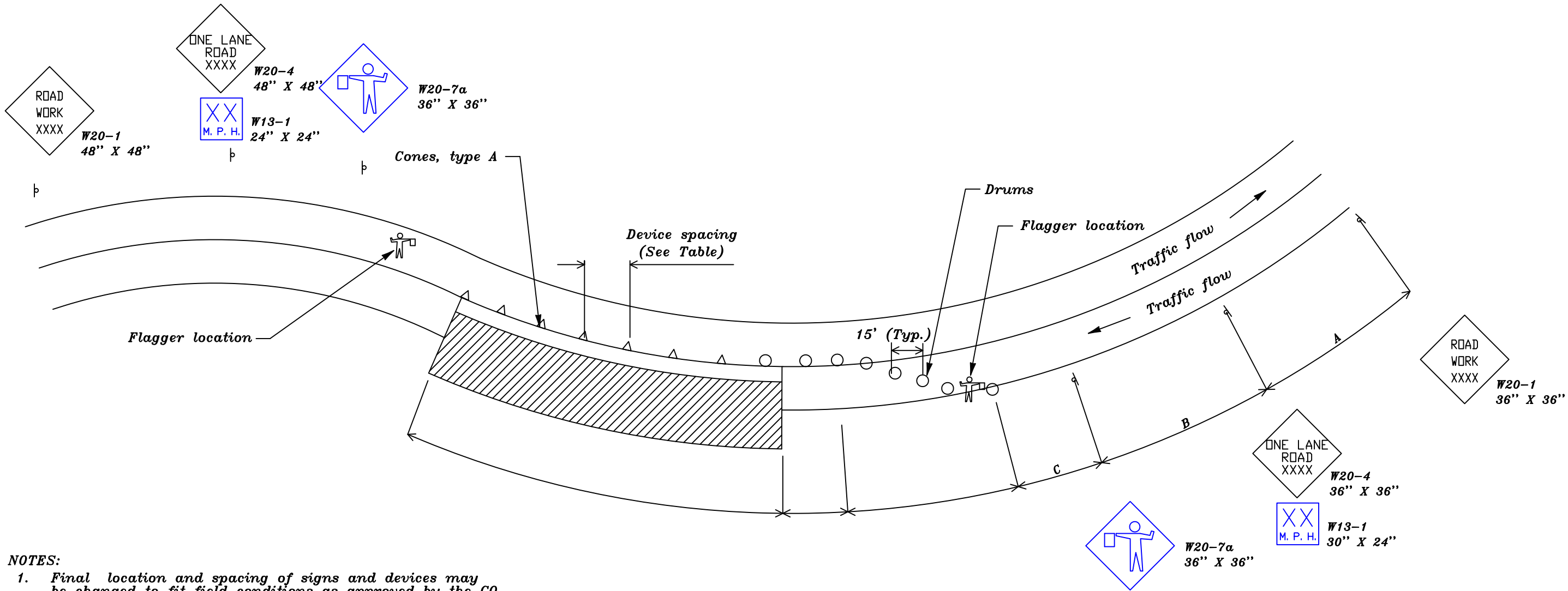
**ROAD CLOSURES CANNOT BE USED ON THIS PROJECT
UNLESS THE CO GIVES AUTHORIZATION.**

**NOTE: THE CONTRACTOR MUST PROVIDE AT LEAST TWO
WEEK NOTIFICATION OF THE ROADWAY CLOSURE
TO THE GENERAL PUBLIC AND LOCAL RESIDENTS.**

DEPARTMENT OF PUBLIC WORKS OFFICE OF HIGHWAY ENGINEERING	
DETAIL	
TRAFFIC CONTROL FOR CONSTRUCTION WORK ZONE	
Sheet No. <u>TC-3</u>	DETAIL 63501

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	G30	97

TYPICAL APPLICATION: TWO WAY, TWO LANE ROADWAY, CLOSING ONE LANE USING FLAGGERS



- NOTES:
- Final location and spacing of signs and devices may be changed to fit field conditions as approved by the CO.
 - A minimum of two flaggers will be required at all times during all phases of operations. Flaggers will be subsidiary to traffic control items.

TYPICAL ROADWAY ONE LANE CLOSURE
AT SION VALLEY ROAD

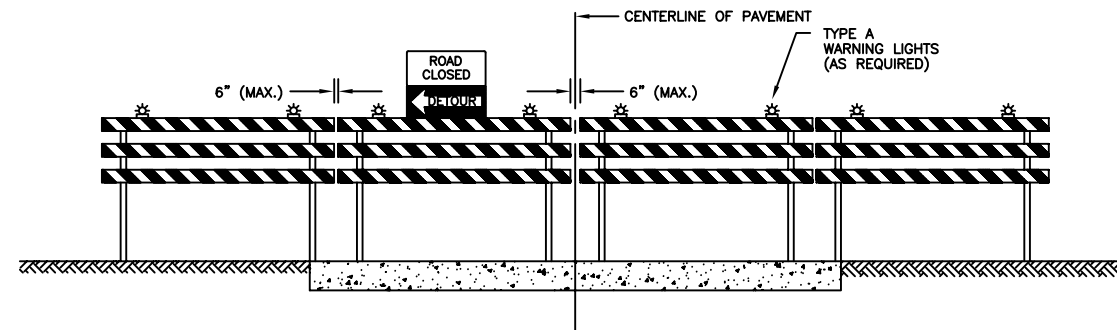
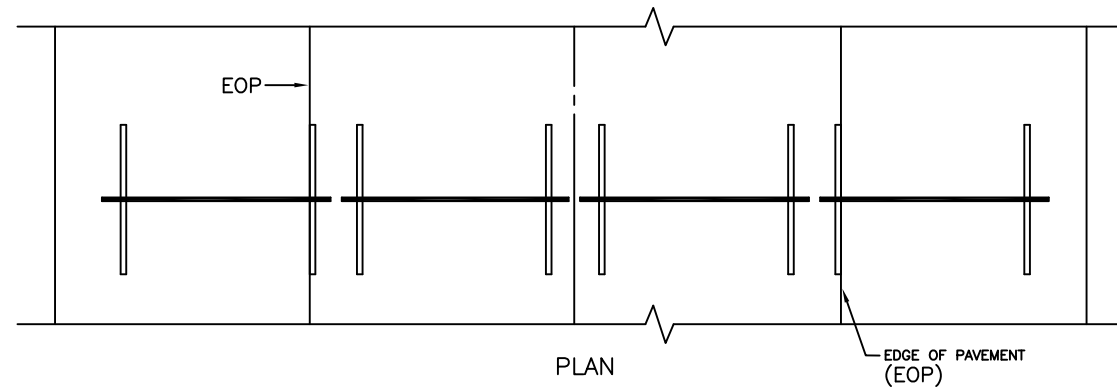
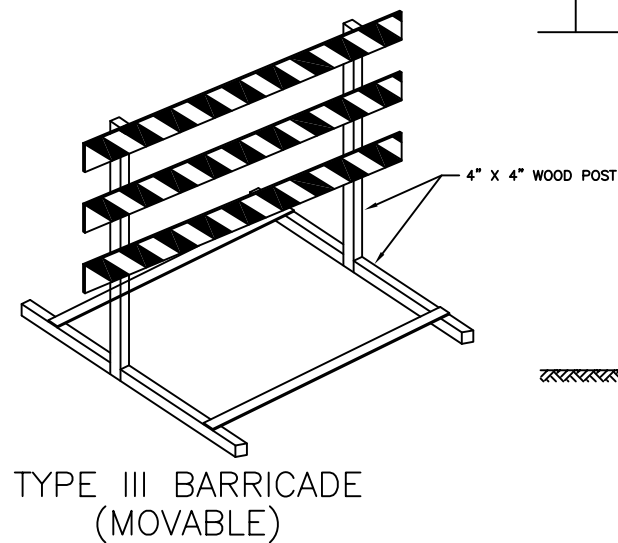
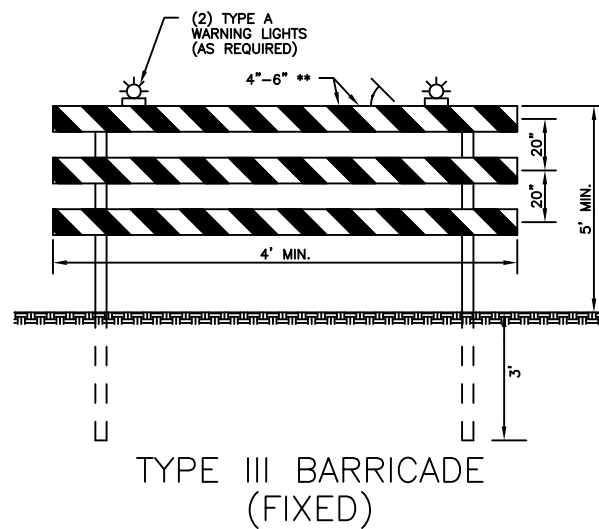
APPROACH SPEED (MPH)	CHANNELIZING DEVICE SPACING (FT)
	WORK AREA
25	50
30	60
35	70
40	80
45	90
50	100
55	100

Road Type	Distance Between Signs		
	A	B	C
Urban (30 MPH and less)	200	200	200
Urban (35 MPH and greater)	350	350	350
Rural	500	500	500

DEPARTMENT OF PUBLIC WORKS OFFICE OF HIGHWAY ENGINEERING	
DETAIL	
TRAFFIC CONTROL FOR CONSTRUCTION WORK ZONE	
Sheet No. <u>TC-4</u>	DETAIL 63501

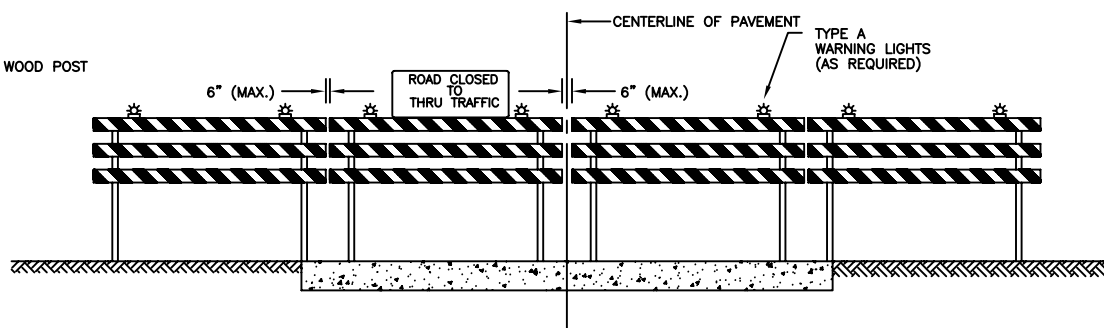
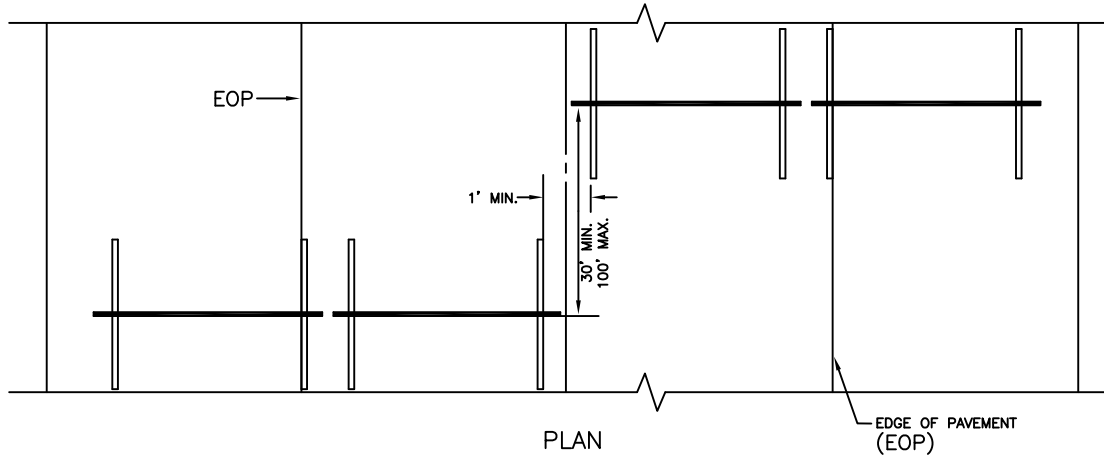
NOTES:

1. All lumber dimensions are nominal.
2. Paint all wood support members white.
3. Stripes on all barricades are 6 inches wide and sloped downward at a 45 degree angle toward the side of the barricade on which approaching traffic must pass. When the barricade is less than 3 feet wide the stripe width is 4 inches.
4. Sandbags may be used to provide additional stability to barricades. If used, sandbags are not to be placed higher than 12 inches above the ground.
5. Stripe both sides of all rail faces on barricades exposed to traffic from both directions.



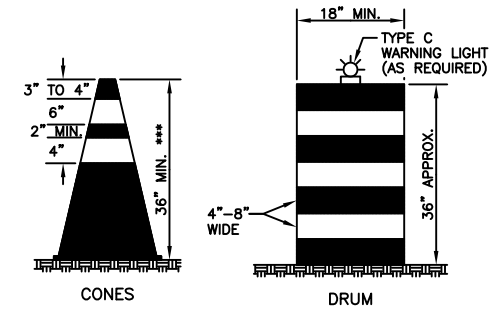
ROAD CLOSED TO ALL TRAFFIC

**ROAD CLOSURES CANNOT BE USED ON THIS PROJECT
UNLESS THE CO GIVES AUTHORIZATION.**

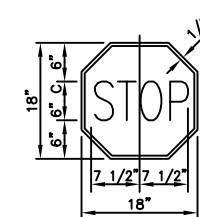


ROAD CLOSED TO ALL TRAFFIC

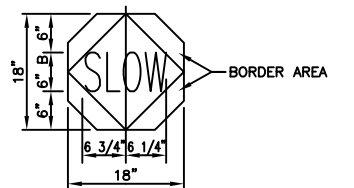
REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	G31	97



CHANNELIZING DEVICES AND HIGH LEVEL WARNING DEVICES



STOP:
LEGEND AND BORDER: WHITE (REFLECTORIZED)
BACKGROUND: RED (REFLECTORIZED)

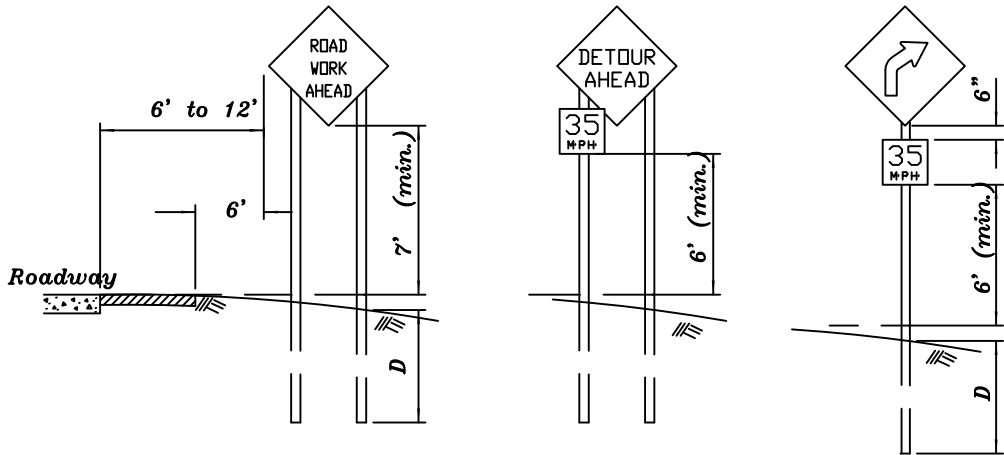


SLOW:
LEGEND AND BORDER AREA: BLACK (NON-REFLECTORIZED)
BACKGROUND: ORANGE (REFLECTORIZED)

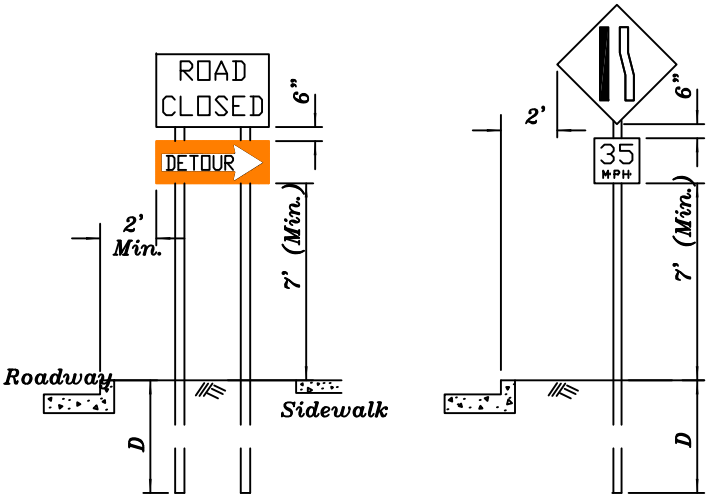
STOP-SLOW PADDLE

DEPARTMENT OF PUBLIC WORKS OFFICE OF HIGHWAY ENGINEERING	
DETAIL TRAFFIC CONTROL FOR CONSTRUCTION WORK ZONE	
Sheet No. TC-5	DETAIL 63501

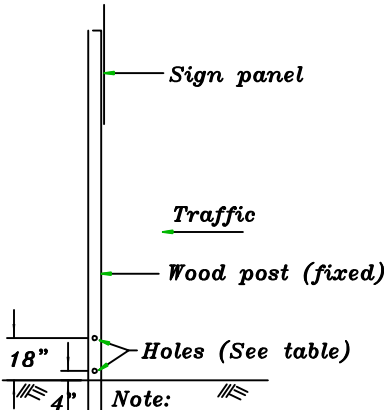
REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	G32	97



RURAL AREA



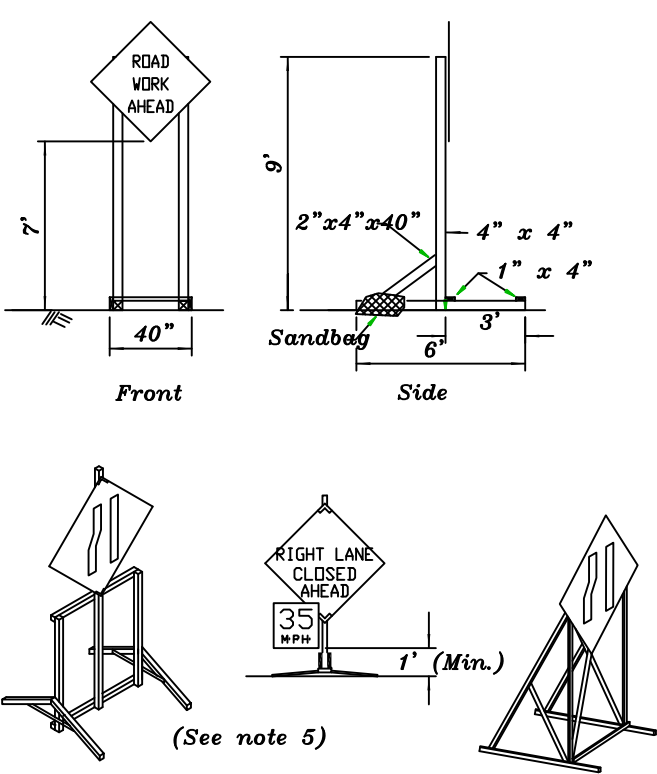
URBAN AREA



BREAKAWAY SUPPORT DETAIL
(FIXED SIGNS - 4" x 6" AND GREATER POSTS)

FIXED ROADWAY SIGNS

Post size	D	Hole Dia.	Maximum Sign Area - Sq. ft.			
			1 Post	2 Posts	3 Posts	4 Posts
4" x 4'	4'	None Req'd	10	20		
4" x 6'	4'	1.5"		35	50	70
6" x 6'	5'	2"		50	75	100
6" x 8'	5'	3"		85	125	165

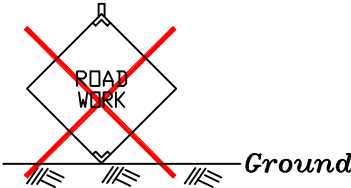


PORTABLE SIGNS

Notes:

1. Wood posts are 4" x 4" unless otherwise indicated.
2. Mount signs that are wider than 3-feet or larger than 10 square feet on double posts.
3. All lumber dimensions are nominal.
4. The Contractor may submit alternate details for portable signs, however, sign mounts hold the sign face in a vertical plane. Portable signs may be mounted lower than fixed signs when approved by the CO.
5. When parking is permitted within 200 feet of the sign, mount the sign a minimum of 7 feet above the pavement surface.
6. When approved by the CO and the Utility Company, utility poles may be used for sign mounting.
7. For posts greater than 4" x 4" see the Breakaway Support Detail. If breakaway design cannot be used, due to post spacing, the sign should be placed outside the clearzone or be shielded by barrier. Do not place holes in posts of non-breakaway signs

NOT ACCEPTABLE



DEPARTMENT OF PUBLIC WORKS OFFICE OF HIGHWAY ENGINEERING	
DETAIL	
TRAFFIC CONTROL FOR CONSTRUCTION WORK ZONE	
Sheet No. <u>TC-6</u>	DETAIL 63501

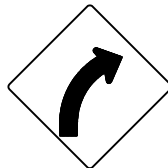
REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081<002>	G33	97

SIGN NO.	TEXT NO.	SIGN TEXT	LOCATION		PANEL SIZE						TEXT SIZE				COLOR COMBO	QUANTITY	TOTAL AREA (SQ FT)	SUPPORT (FT)	REMARKS
			STATION	SIDE	WIDTH (IN.)	HEIGHT (IN.)	AREA (SQ FT)	CORNER RADII (IN.)	BORDER WIDTH (IN.)	MARGIN WIDTH (IN.)	NUMBER (IN.)	UPPER CASE (IN.)	LOWER CASE (IN.)	SERIES					
1	G20-2	END CONSTRUCTION			46	24	←			SEE NOTE 1	→				BLACK ON ORANGE	2	32		
2	W20-7A				48	48	←			SEE NOTE 1	→				BLACK ON ORANGE	4	64		
3	W20-1	BEGIN CONSTRUCTION			48	48	←			SEE NOTE 1	→				BLACK ON ORANGE	5	80		
4	W20-1	ROAD CONSTRUCTION 500 FT			48	48	←			SEE NOTE 1	→				BLACK ON ORANGE	5	80		
5	W20-1	ROAD CONSTRUCTION 1000 FT			48	48	←			SEE NOTE 1	→				BLACK ON ORANGE	5	80		
6	W20-1	ROAD CONSTRUCTION 1500 FT			48	48	←			SEE NOTE 1	→				BLACK ON ORANGE	5	80		
7	W21-4	ROAD WORK AHEAD			48	48	←			SEE NOTE 1	→				BLACK ON ORANGE	5	80		
SUB-TOTAL (THIS SHEET)																33	496		

NOTES:

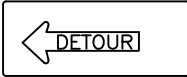
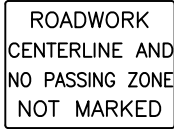
1. SEE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION FOR SIGN DIMENSIONS.
2. LOCATION OF SIGNS WILL BE AS DIRECTED BY THE CO.

DEPARTMENT OF PUBLIC WORKS OFFCE OF HIGHWAY ENGINEERING	
DETAIL CONSTRUCTION SIGNS	
Sheet No. <u>TC-7</u>	DETAIL 63501

SIGN NO.	TEXT NO.	SIGN TEXT	LOCATION		PANEL SIZE						TEXT SIZE				COLOR COMBO	QUANTITY	TOTAL AREA (SQ FT)	SUPPORT (FT)	REMARKS
			STATION	SIDE	WIDTH (IN.)	HEIGHT (IN.)	AREA (SQ FT)	CORNER RADII (IN.)	BORDER WIDTH (IN.)	MARGIN WIDTH (IN.)	NUMBER (IN.)	UPPER CASE (IN.)	LOWER CASE (IN.)	SERIES					
8	W20-3				48	48	←			SEE NOTE 1					BLACK ON ORANGE	3	48		
9	W20-3				48	48	←			SEE NOTE 1					BLACK ON ORANGE	3	32		
10	W20-3				48	48	←			SEE NOTE 1					BLACK ON ORANGE	3	32		
11	W20-3				48	48	←			SEE NOTE 1					BLACK ON ORANGE	1	16		
12	W20-3				48	48	←			SEE NOTE 1					BLACK ON ORANGE	5	32		
13	W20-3				48	48	←			SEE NOTE 1					BLACK ON ORANGE	5	32		
SUB-TOTAL (THIS SHEET)																20	192		

- NOTES:
- SEE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION FOR SIGN DIMENSIONS.
 - LOCATION OF SIGNS WILL BE AS DIRECTED BY THE CO.

DEPARTMENT OF PUBLIC WORKS OFFCE OF HIGHWAY ENGINEERING	
DETAIL CONSTRUCTION SIGNS	
Sheet No. <u>TC-8</u>	DETAIL 63501

SIGN NO.	TEXT NO.	SIGN TEXT	LOCATION		PANEL SIZE						TEXT SIZE				COLOR COMBO	QUANTITY	TOTAL AREA (SQ FT)	SUPPORT (FT)	REMARKS
			STATION	SIDE	WIDTH (IN.)	HEIGHT (IN.)	AREA (SQ FT)	CORNER RADII (IN.)	BORDER WIDTH (IN.)	MARGIN WIDTH (IN.)	NUMBER (IN.)	UPPER CASE (IN.)	LOWER CASE (IN.)	SERIES					
14	W20-3				48	24	←			SEE NOTE 1	→				BLACK ON ORANGE	3	24		
15	R11-2				48	48	←			SEE NOTE 1	→				BLACK ON ORANGE	3	48		
16	M4-10R				36	36	←			SEE NOTE 1	→				BLACK ON ORANGE	2	18		
17	M4-10L				36	36	←			SEE NOTE 1	→				BLACK ON ORANGE	2	18		
18	R3-1L				36	36	←			SEE NOTE 1	→				BLACK ON ORANGE	1	9		
19	W8-9AE				36	36	←			SEE NOTE 1	→				BLACK ON ORANGE	4	36		
20	W20-8				36	36	←			SEE NOTE 1	→				BLACK ON ORANGE	2	18		
SUB-TOTAL (THIS SHEET)																17	171		

- NOTES:
- SEE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION FOR SIGN DIMENSIONS.
 - LOCATION OF SIGNS WILL BE AS DIRECTED BY THE CO.

SIGN NO.	TEXT NO.	SIGN TEXT	LOCATION		PANEL SIZE						TEXT SIZE				COLOR COMBO	QUANTITY	TOTAL AREA (SQ FT)	SUPPORT (FT)	REMARKS
			STATION	SIDE	WIDTH (IN.)	HEIGHT (IN.)	AREA (SQ FT)	CORNER RADII (IN.)	BORDER WIDTH (IN.)	MARGIN WIDTH (IN.)	NUMBER (IN.)	UPPER CASE (IN.)	LOWER CASE (IN.)	SERIES					
21	W13-1				24	24	←			SEE NOTE 1					BLACK ON ORANGE	5	20		
22	W8-7				24	24	←			SEE NOTE 1					BLACK ON ORANGE	4	16		
23	FLAG				24	24	←			SEE NOTE 1					BLACK ON ORANGE	5	20		
24	W21-1A				48	48	←			SEE NOTE 1					BLACK ON ORANGE	4	64		
SUB-TOTAL (THIS SHEET)																18	120		
TOTAL																88	979		

NOTES:
1. SEE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION FOR SIGN DIMENSIONS.
2. LOCATION OF SIGNS WILL BE AS DIRECTED BY THE CO.

DEPARTMENT OF PUBLIC WORKS OFFCE OF HIGHWAY ENGINEERING	
DETAIL CONSTRUCTION SIGNS	
Sheet No. <u>TC-10</u>	DETAIL 63501

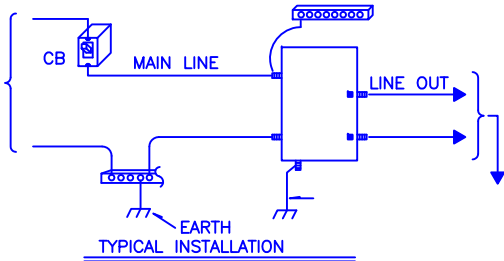
REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	G37	95

SIGNALIZATION NOTES

- (1) ALL LUMINARIES TO BE 180 WATTS, LED CLEAR COLOR, 27,500 NOMINAL LUMENS, MEDIUM VERTICAL DISTRIBUTION, TYPE 3, LATERAL DISTRIBUTION, SEMI CUTOFF, STANDARD DESIGN.
- (2) THE SPACE BETWEEN THE POLE BASE PLATE AND THE FOUNDATION SHALL BE FILLED WITH NONSHRINK GROUT. A 1/2" DRAIN HOLE SHALL BE PLACED IN THE GROUT AT A LOCATION TO DRAIN ANY MOISTURE THAT MAY ACCUMULATE IN THE POLE.

IN LIEU OF THE NONSHRINK GROUT, A HEAVY GAUGE GALVANIZED SHEET STEEL FORMED TO FIT THE HOLE INSIDE THE BASE PLATE AND OF SUFFICIENT WIDTH TO ENCLOSE THE VOID BETWEEN THE BASE PLATE AND FOUNDATION TO BE INSTALLED. THE SHEET STEEL SHALL BE FASTENED IN PLACE IN SUCH A MANNER AS TO PREVENT ENTRY BY EITHER RODENTS OR VANDALS.
- (3) POLES TO BE INSTALLED ON THIS PROJECT SHALL BE SELECTED FROM PREAPPROVED SHOP DRAWINGS OF POLES WHICH HAVE BEEN STANDARDIZED FOR MAXIMUM LOADING.
- (4) ELECTRICAL CONDUCTORS TO BE INSTALLED IN TRAFFIC SIGNAL POLES, AND FROM THE CONTROLLER TO EACH TRAFFIC SIGNAL POLE, SHALL BE SOLID COPPER TYPE THW OR THWN 75 DEGREE CELSIUS 600 VOLT. LINE CONDUCTOR SHALL BE BLACK; NEUTRAL CONDUCTOR SHALL BE WHITE OR GRAY. AN ALTERNATE TYPE OF INSULATION MAY BE USED IF APPROVED BY THE RESIDENT ENGINEER PRIOR TO INSTALLATION.
- (5) A SURGE ARRESTOR SHALL BE FURNISHED IN EACH TRAFFIC SIGNAL CONTROLLER. THE ARRESTOR REQUIREMENTS ARE AS FOLLOWS:

PEAK CURRENT.....20,000 AMPS
(8x20 US WAVESHAPE)
LIFE TEST.....5% CHANGE
(VOLTAGE CLAMP BEFORE AND AFTER
25 SURGES OF 20KA WAVESHAPE)
CLAMP VOLTAGE.....250 V. TYPE @ 20KA
RESPONSE TIME.....VOLTAGE NEVER EXCEEDS
250 VOLTS DURING SURGE
CONTINUOUS SERVICE CURRENT..10 AMPS MAX.;
120 VAC. 60HZ
DIMENSIONS (INCHES).....3.13 x 7.15 x 2.3
(NOT INCLUDING GND) (WxLxH)
OPERATING TEMP.....-40C TO +85C



- (6) THE CONTROLLERS TO BE FURNISHED ON THIS PROJECT SHALL BE 8 PHASE VEHICLE ACTUATED SOLID STATE DIGITAL SIGNAL TRAFFIC CONTROLLERS. A MINIMUM OF 12 LOAD SWITCH RECEPTACLES SHALL BE FURNISHED AND WIRED TO THE MOUNTING FRAMES. ALL WIRING FROM THE FIELD TERMINALS SHALL BE WIRED TO THE MOUNTING FRAME FOR AN EIGHT PHASE OPERATION. NO CABINET OR CONTROLLER WIRING SHALL BE REQUIRED EXCEPT FOR ADDITIONAL DETECTOR CONNECTING CABLES WHEN CONTROLLER IS EXPANDED FOR AN EIGHT PHASE OPERATION. THE CONTROLLERS SHALL BE CAPABLE OF PERFORMING AS SHOWN ON THE PHASE DIAGRAM AND SEQUENCE.
- (7) THE POWER SOURCE FOR THE TRAFFIC CONTROL SYSTEM SHALL BE RUN UNDERGROUND FROM THE NEAREST POWER SOURCE TO A METER MAIN WHICH SHALL BE MOUNTED ON AN APPROVED CONCRETE COLUMN NO MORE THAN 30' FROM THE CONTROLLER CABINET. THE POWER SOURCE THEN SHALL BE RUN UNDERGROUND TO THE TRAFFIC SIGNAL CABINET.
- (8) ALL TRAFFIC SIGNAL AND PEDESTRIAN SIGNAL HEADS SHALL BE LED FURNISHED WITH GLASS LENSES, THE LENSES SHALL CONFORM TO THE LATEST STANDARD OF INSTITUTE OF TRANSPORTATION ENGINEERS.
- (9) CARD RACK DETECTORS SHALL BE FURNISHED ON THIS PROJECT.
- (10) ALL DETECTORS SHALL BE FURNISHED WITH DELAY OUTPUTS AND EXTEND OUTPUTS ACCORDING TO SEC. 636.21(b) OF THE TRAFFIC SIGNAL SPECIFICATIONS.
- (11) VIDEO THERMAL DETECTION CAMERAS SHALL BE USED IN THIS PROJECT.
- (12) ON THIS PROJECT VACUUM FORMED BACKPLATES SHALL BE USED ON ALL STANDARD TRAFFIC SIGNAL HEADS WITH REFLECTIVE OUTER BAND.
- (13) CONCRETE PULL BOXES TYPE I SHALL BE USED.
- (14) THE CONTROLLER SHALL HAVE THE NUMBER OF DC ISOLATATORS AND SUPRESSORS AS SHOWN BELOW:
SION FARM INTERSECTION. ----- 8
- (15) THE CONTROLLER TO BE FURNISHED ON THIS PROJECT SHALL BE TRAFFIC CONTROL TECHNOLOGIES 336A/170E/412C CABINET ASSEMBLY COMPLETE WITH BITRAN AND QUICKNET CONTROLLER SOFTWARE BASE MOUNT. THE CABINET SHALL BE EQUIPPED WITH A 2010ECL CONFLICT MONITOR, TWELVE 200 LOAD SWITCHES, EIGHT THERMAL DETECTOR MODULES, AND ALL OTHER ALL OTHER NECESSARY COMPONENTS FOR A COMPLETE TRAFFIC CONTROLLER ASSEMBLY. THE CONTROLLER SHALL BE CAPABLE OF PERFORMING AS SHOWN ON THE PHASE & SEQUENCE DIAGRAMS, PEDESTRIAN ISOLATION SHALL BE PROVIDED IN THE CONTROLLER CABINET. ALL N,E,M,A, FUNCTIONS SHALL TERMINATE IN THE CONTROLLER CABINET.

ELECTRICAL CONDUIT NOTES

- (1) CONDUITS SHALL CONFORM TO STANDARD SPECIFICATONS, SECTION 636 OR APPLICABLE SPECIAL PROVISIONS.
- (2) TRENCHED CONDUIT SHALL BE SCHEDULE 80 PLASTIC UNLESS OTHERWISE SPECIFIED IN THE PLANS, AND SHALL BE OF THE SIZE SPECIFIED.
- (3) THE UNDERGROUND UTILITY MARKING TAPE SHALL BE A MINIMUM OF 4 MIL THICKNESS, 6" WIDE, POLYETHYLENE TAPE. COLOR SHALL BE IN ACCORDANCE WITH AWWA UNIFORM COLOR CODE. TAPE USED TO MARK UNDERGROUNG ELECTRICAL CABLE SHALL BE SAFETY RED COLOR WITH PRINTED LEGEND "CAUTION-ELECTRICAL LINE BURIED BELOW". THE COST OF THE TAPE SHALL BE SUBSIDIARY TO ITEM 63606(D) AND 63606(E).
- (4) THE TRENCH SHALL BE BACKFILLED WITH AN APPROVED AGGREGATE IN 6" LAYERS AND COMPACTED TO 95% DENSITY AS DETERMINED BY AASHTO T99. WHEN SPECIFIED 3000PSI CONCRETE SHALL BE USED TO FILL THE TRENCH WHEN A ROTARY TRENCHER IS USED OR AS DIRECTED BY THE ENGINEER OR OTHERWISE INDICATED IN THE PLANS.
- (5) ALL CONDUIT SHALL BE BURIED A MINIMUM OF 30" FROM THE FINAL ELEVATION OF THE ASPHALT PAVEMENT OR AS INDICATED IN THE PLANS.
- (6) THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE INFLECTED TO THE EXISTING UNDERGROUND UTILITIES WITHIN THE PROJECT AREA AS A RESULT OF THIS DIGGING, TRENCHING, BORING, ETC...PRIOR TO DIGGING NEAR UTILITIES. THE CONTRACTOR SHALL CALL ALL UNDERGROUND FACILITIES REGISTERED IN THE AREA OF CONSTRUCTION AND HAVE THEM MARKED IN THE CONSTRUCTION AREA.
- (7) THE COST OF THE BURIED ELECTRICAL TAPE SHALL BE INCLUDED IN THE COST OF THE RESPECTIVE TRENCHED CONDUIT.
- (8) SEE ADDITIONAL NOTES FOR CONDUIT PLACEMENT ON SHEET G39.

DEPARTMENT OF PUBLIC WORKS
OFFICE OF HIGHWAY ENGINEERING

DETAIL

TRAFFIC SIGNAL NOTES

Sheet No. SIG-1

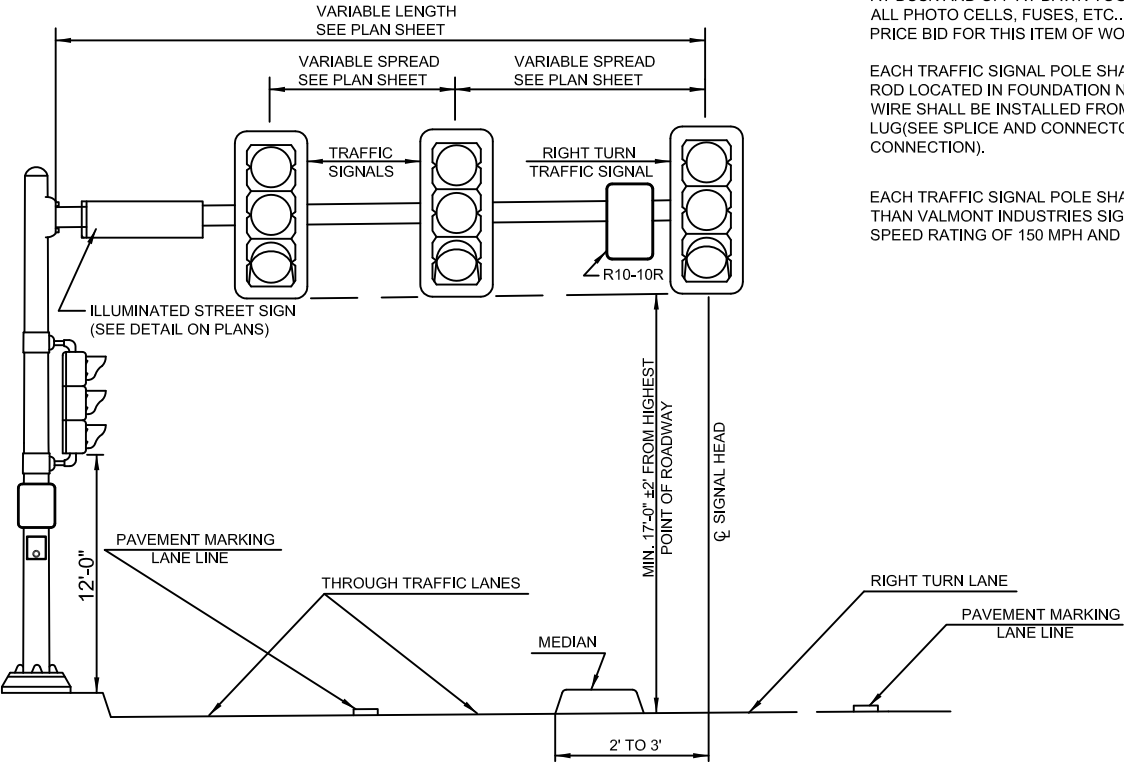
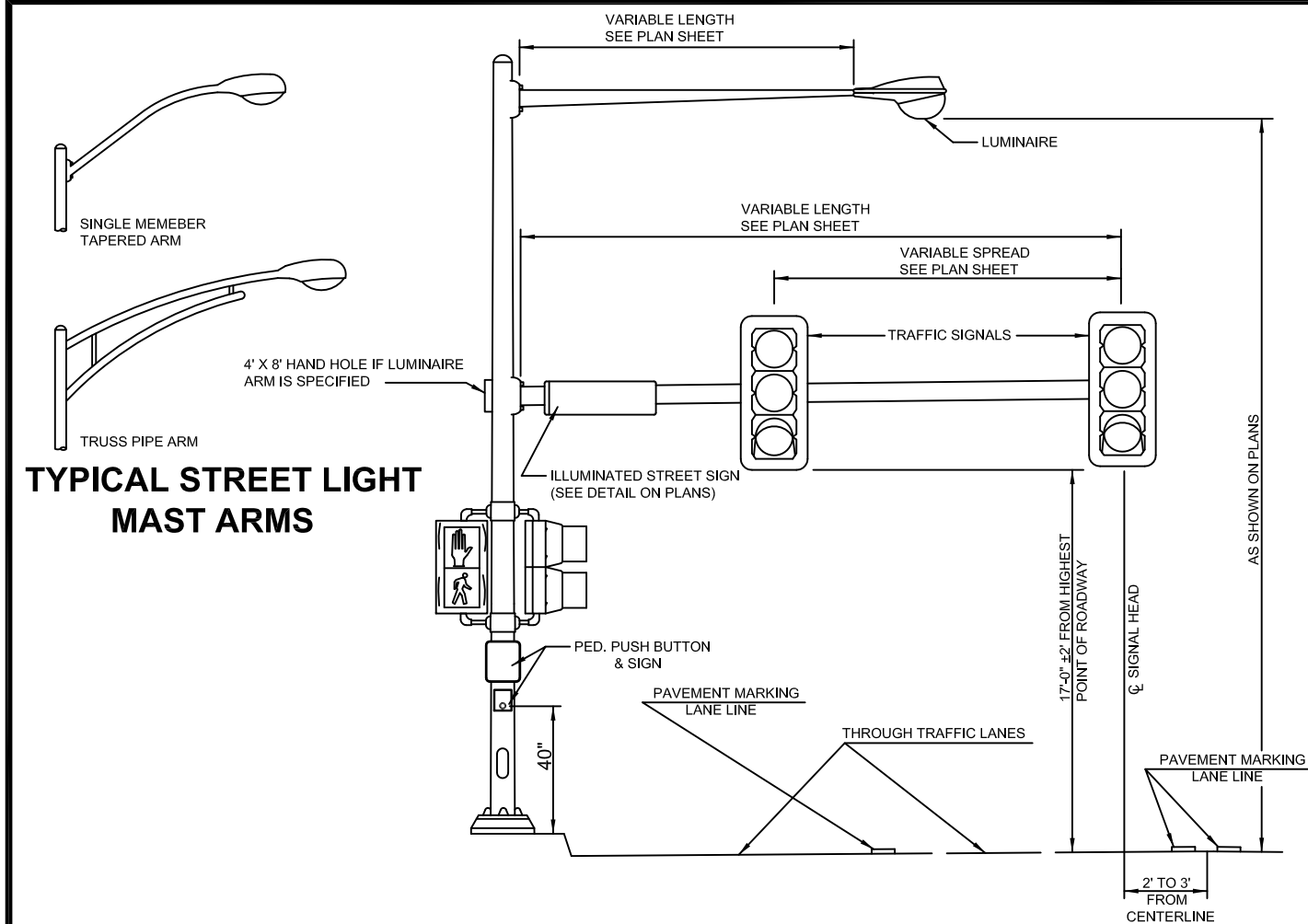
DETAIL
63601

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	G38	95

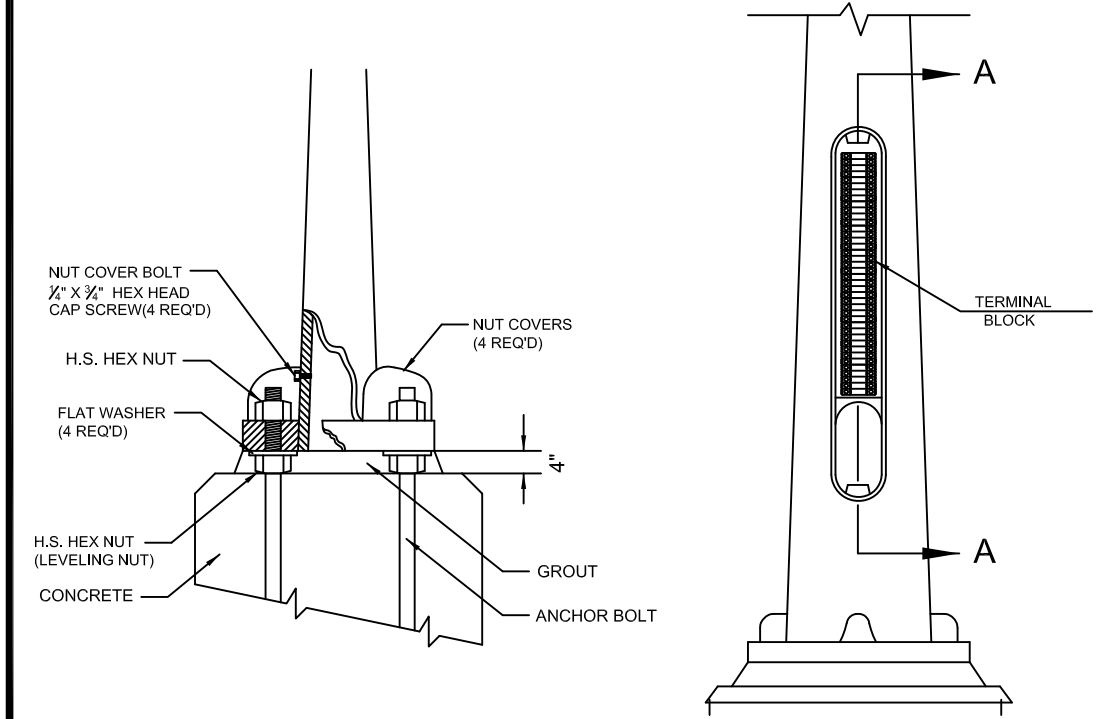
NOTE: THE CONTRACTOR SHALL SUPPLY EACH LUMINAIRE WITH A BUILT-IN PHOTO ELECTRIC CELL TO TURN ON ALL THE LUMINAIRES AT DUSK AND OFF AT DAWN TOGETHER. THE COST OF SUPPLIES, ALL PHOTO CELLS, FUSES, ETC..... SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THIS ITEM OF WORK.

EACH TRAFFIC SIGNAL POLE SHALL BE GROUNDED TO A GROUND ROD LOCATED IN FOUNDATION NO. 10 AWG SOLID BARE COPPER WIRE SHALL BE INSTALLED FROM GROUND ROD TO POLE GROUNDING LUG(SEE SPLICE AND CONNECTOR DETAILS FOR GROUND ROD CONNECTION).

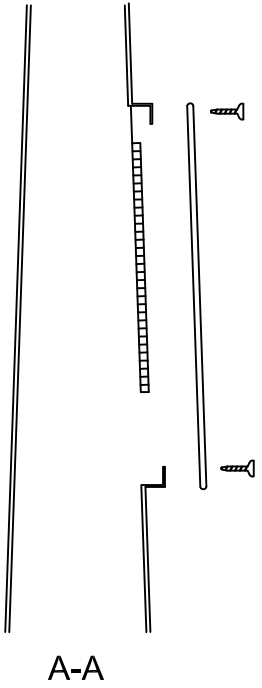
EACH TRAFFIC SIGNAL POLE SHALL BE EQUIVALENT TO OR BETTER THAN VALMONT INDUSTRIES SIGNAL POLES WITH A MINIMUM WIND SPEED RATING OF 150 MPH AND A 1.3 WIND GUST FACTOR.



TYPICAL POLE SRTUCTURE AND HANDHOLE DETAILS



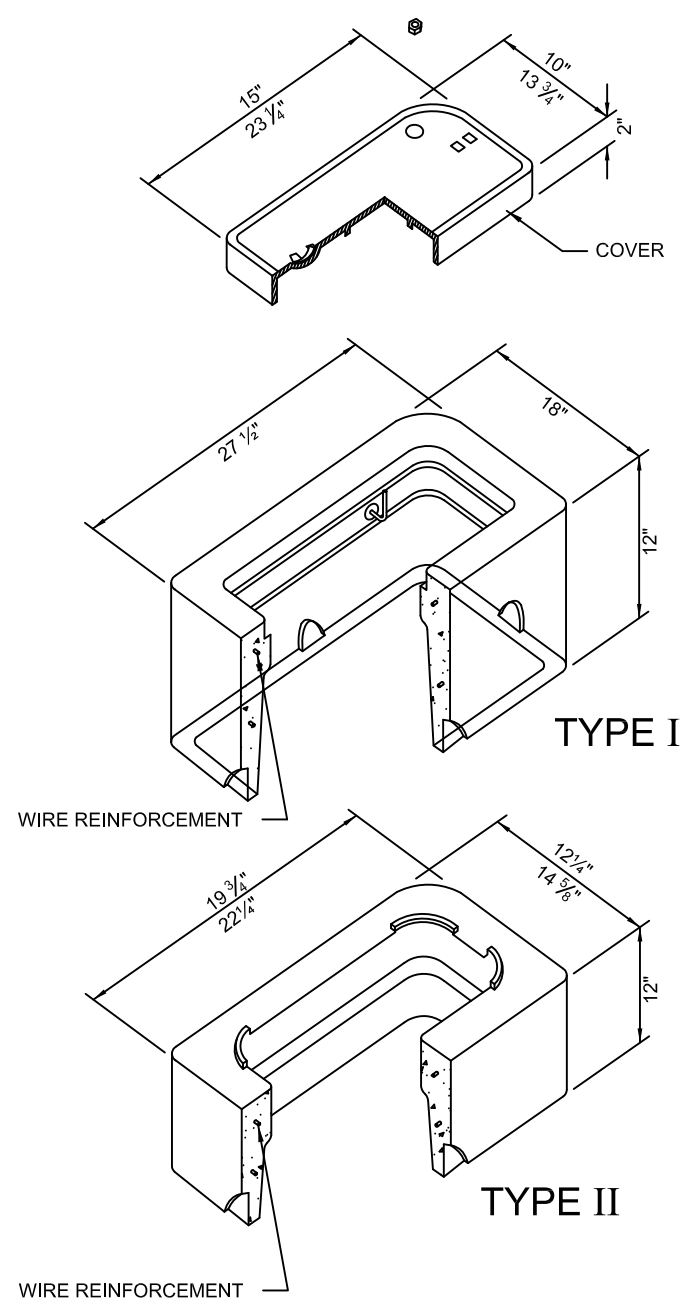
TYPICAL POLE BASE AND HANDHOLE DETAILS



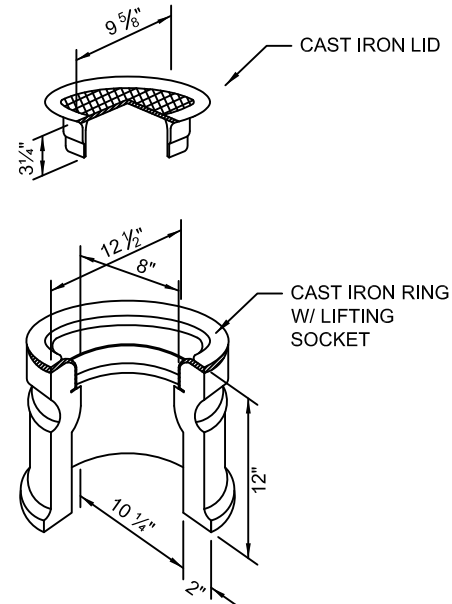
PEDESTAL MOUNTED SIGNAL

DEPARTMENT OF PUBLIC WORKS OFFICE OF HIGHWAY ENGINEERING	
PEDESTAL & MAST ARM POLE DETAILS	
Sheet No. <u>SIG-2</u>	DETAIL 63601(A)

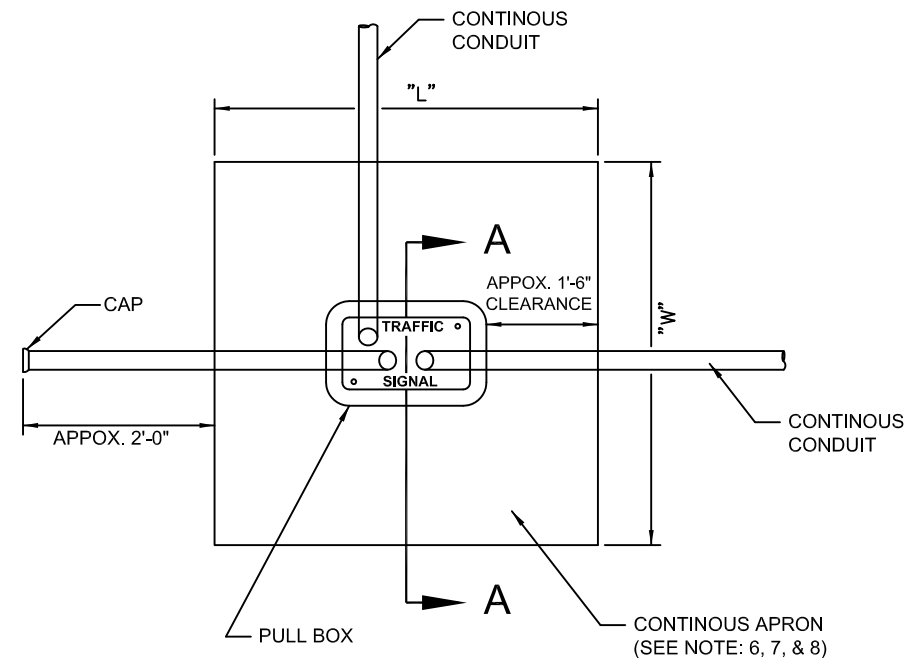
REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	G40	95



CONCRETE PULL BOX
TYPE I & II



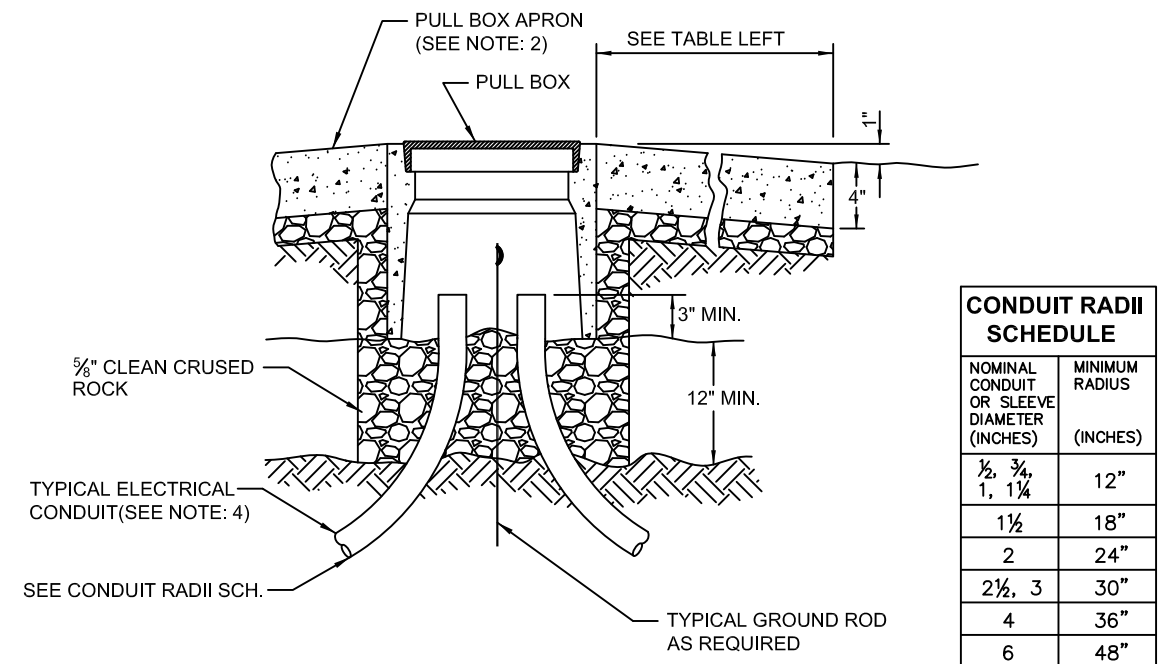
CONCRETE PULL BOX
TYPE III



PULL BOX SIZE	"L"	"W"	CLASS "A" CONCRETE C.Y.
I	4'-6"	4'-6"	.25
II	4'-0"	4'-0"	.20
III	3'-6"	3'-6"	.15

TYPICAL PULL BOX APRON AND CONDUIT DETAILS

- NOTE:**
1. THE PRE-CAST CONCRETE BODY AND COVER SHALL CONFORM TO SECTION 636 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION OF ROADS AND BRIDGES ON FEDERAL HIGHWAY PROJECTS,
 2. THE CONCRETE APRON SHALL BE 4000PSI WITH #4 REINFORCEMENT(6" THICK).
 3. THE GRAVEL OR CRUSHED ROCK BASE SHALL BE CLEAN, TOUGH, DURABLE, PRACTICALLY FREE FROM CLAY OR OTHER FOREIGN SUBSTANCES AND SHALL PASS A 5/8" SIEVE 100%.
 4. THE ELECTRICAL CONDUCTORS SHALL CONFORM TO SECTION 636 OF FP-14.
 5. EACH PULL BOX SHALL BE INSTALLED WITH THE APPROPRIATE SIZED CONCRETE APRON, UNLESS IT IS INSTALLED IN A SIDEWALK OR OTHER PAVED AREA OR OTHERWISE SPECIFIED OR DIRECTED BY THE ENGINEER, AND SHALL BE BUILT TO FIT THE EXISTING FIELD CONDITIONS AND PRESENT A NEAT WORKMAN LIKE APPEARANCE. ALL PULL BOXES SHALL BE ABLE TO SUPPORT HS-20 LOADING OR BETTER.
 6. THE PULL BOX COVERS SHALL HAVE THE APPROPRIATE LEGEND ("TRAFFIC SIGNAL") UNLESS OTHERWISE SPECIFIED IN THE PLANS. NO ADVERTISING OTHER THAN THE MANUFACTURER'S LOGO WILL BE ALLOWED ON THE PULL BOX COVERS.
 7. THE DIMENSIONS FOR THE PULL BOXES ARE NOMINAL AND MAY VARY SLIGHTLY BY THE MANUFACTURER'S DESIGN.
 8. THE COST OF THE CONCRETE APRON AND GRAVEL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE PULL BOX ITEM, UNLESS OTHERWISE SPECIFIED.



CONDUIT RADII SCHEDULE		
NOMINAL CONDUIT OR SLEEVE DIAMETER (INCHES)	MINIMUM RADIUS (INCHES)	
1/2, 3/4, 1, 1 1/4	12"	
1 1/2	18"	
2	24"	
2 1/2, 3	30"	
4	36"	
6	48"	

SECTION A-A

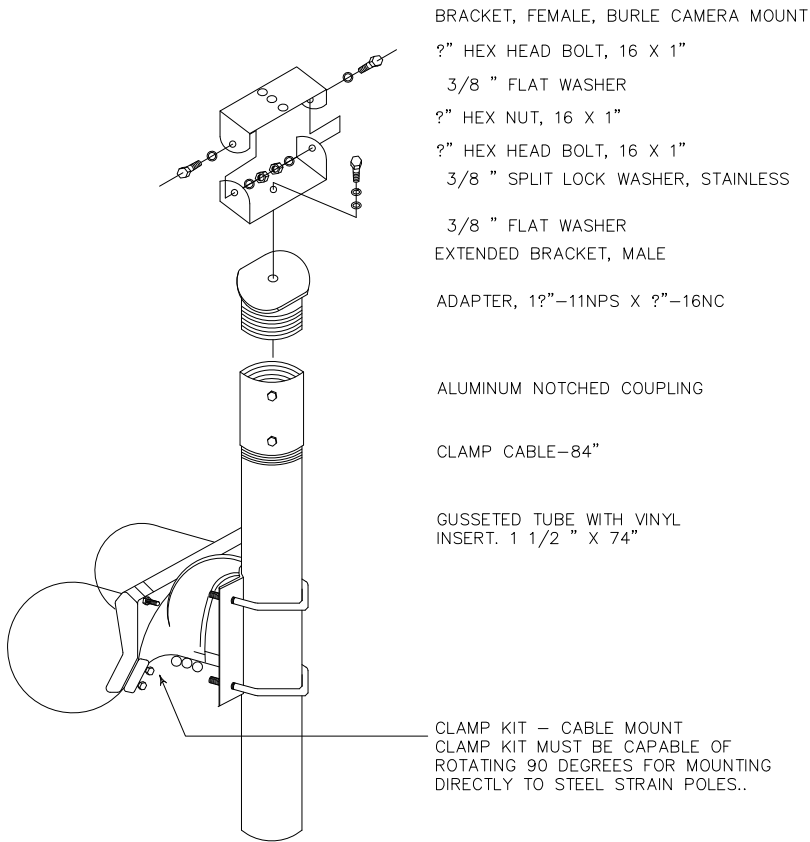
DEPARTMENT OF PUBLIC WORKS
OFFICE OF HIGHWAY ENGINEERING

PULL BOX

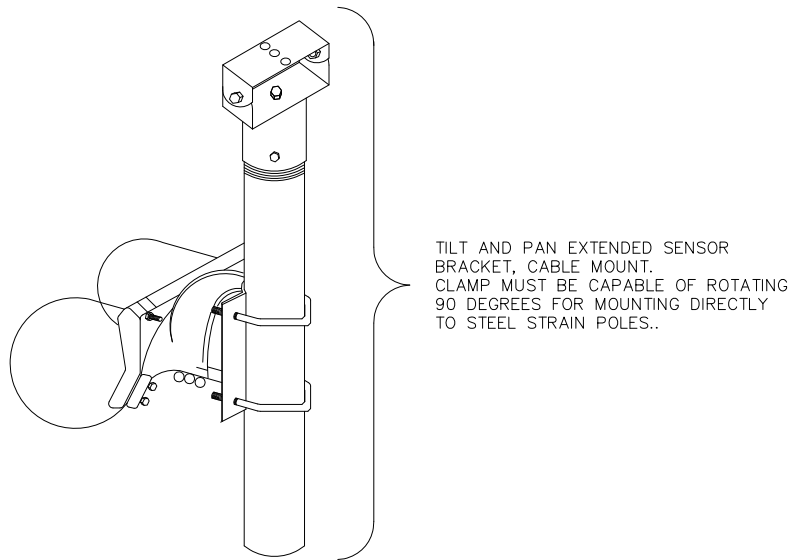
Sheet No. SIG-4

DETAIL
63601(G)

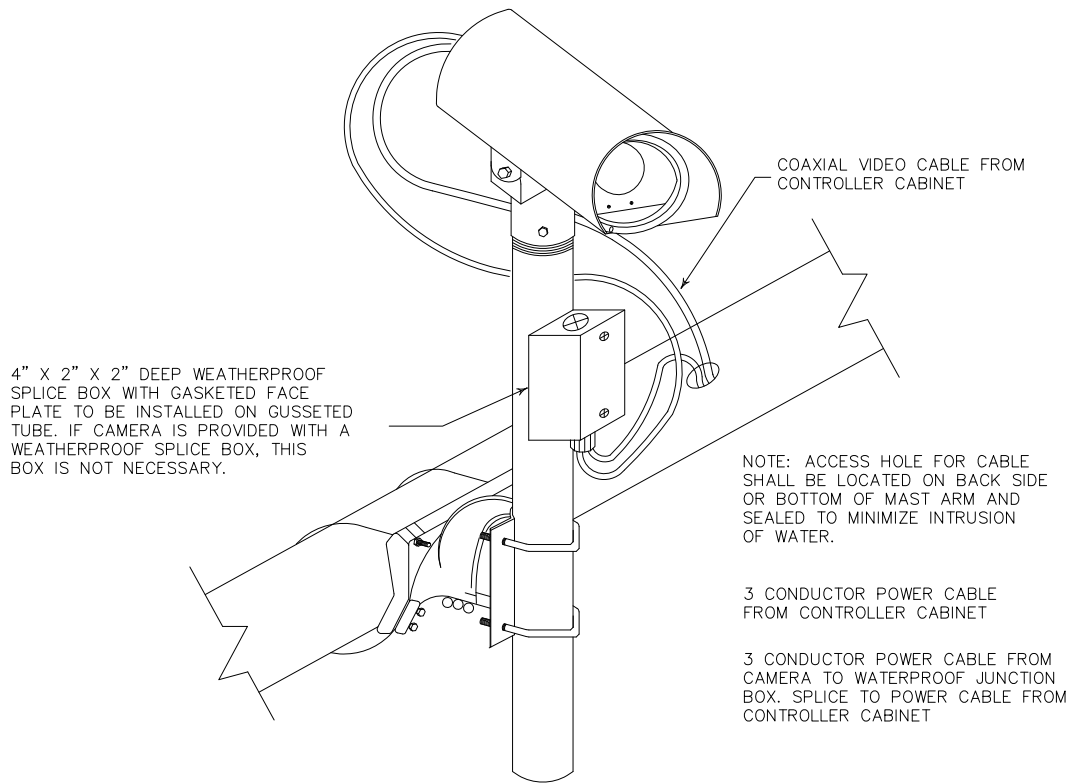
REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081<002>	G41	97



CAMERA MOUNT AND BRACKET PARTS



CAMERA MOUNT AND BRACKET ASSEMBLY

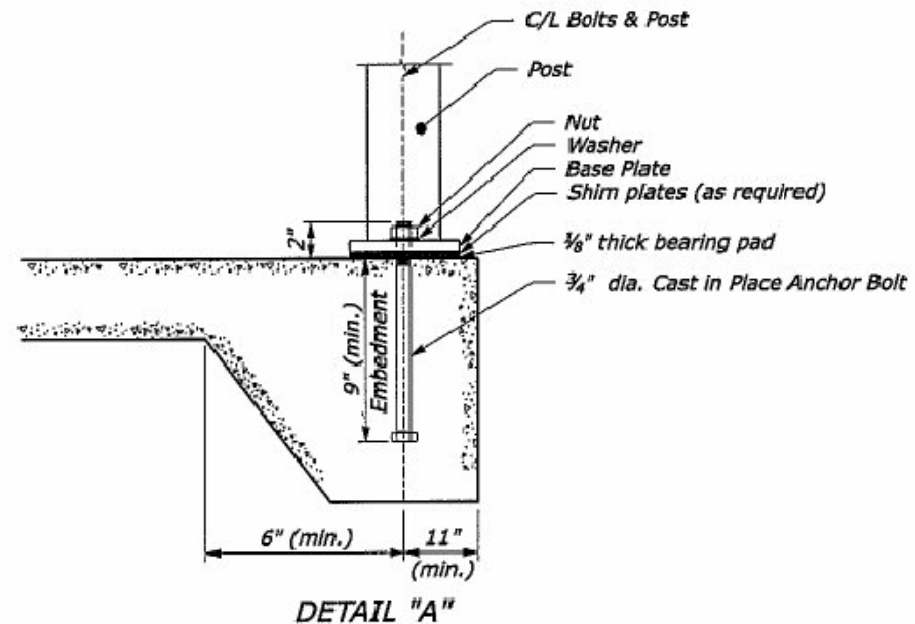
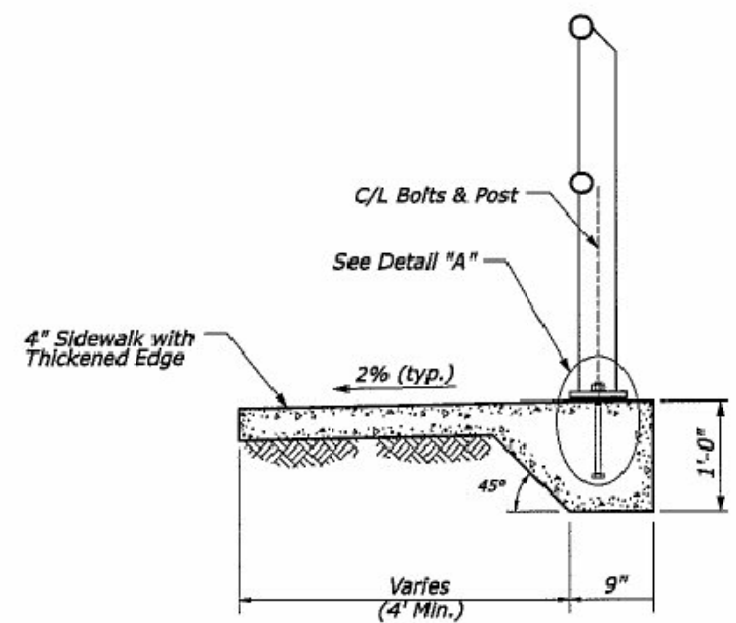
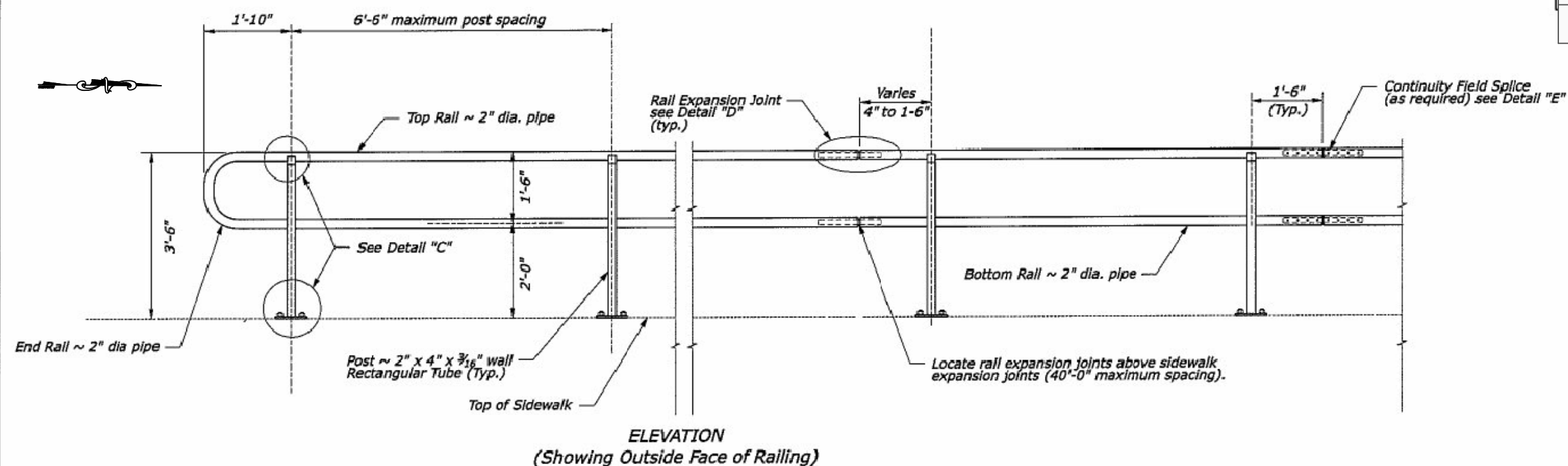


MAST ARM CAMERA INSTALLATION

NOT TO SCALE

DEPARTMENT OF PUBLIC WORKS OFFICE OF HIGHWAY ENGINEERING	
DETAIL VIDEO CAMERA TYPICAL INSTALLATION	
	DETAIL 63601

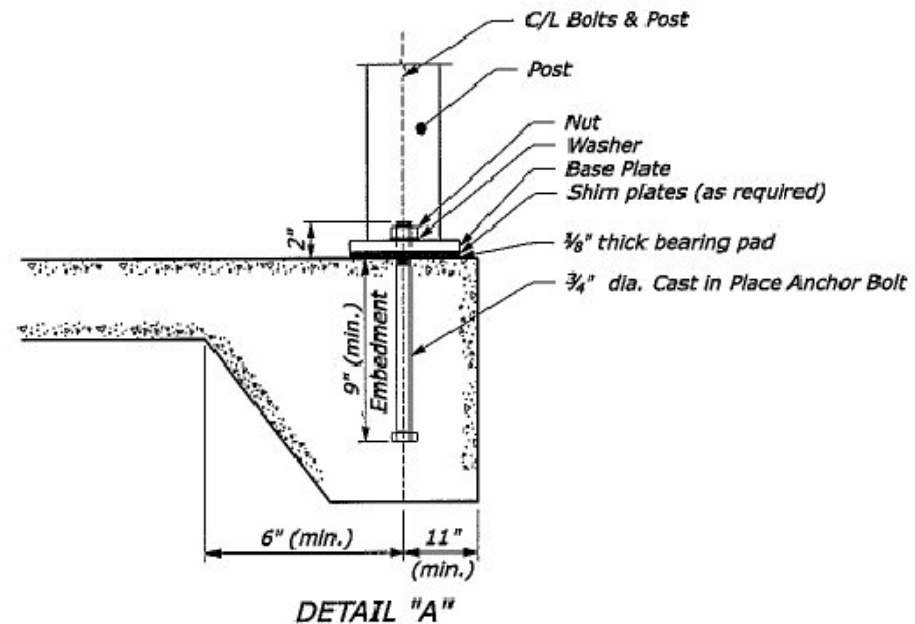
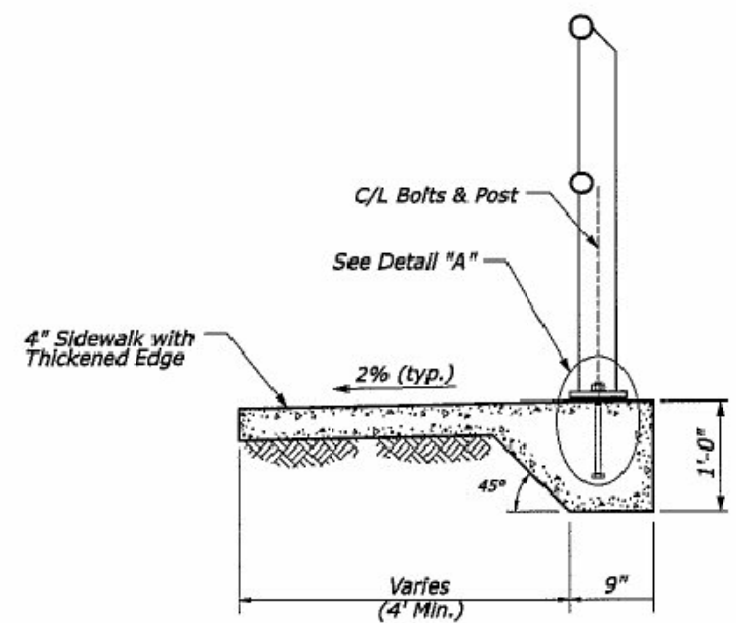
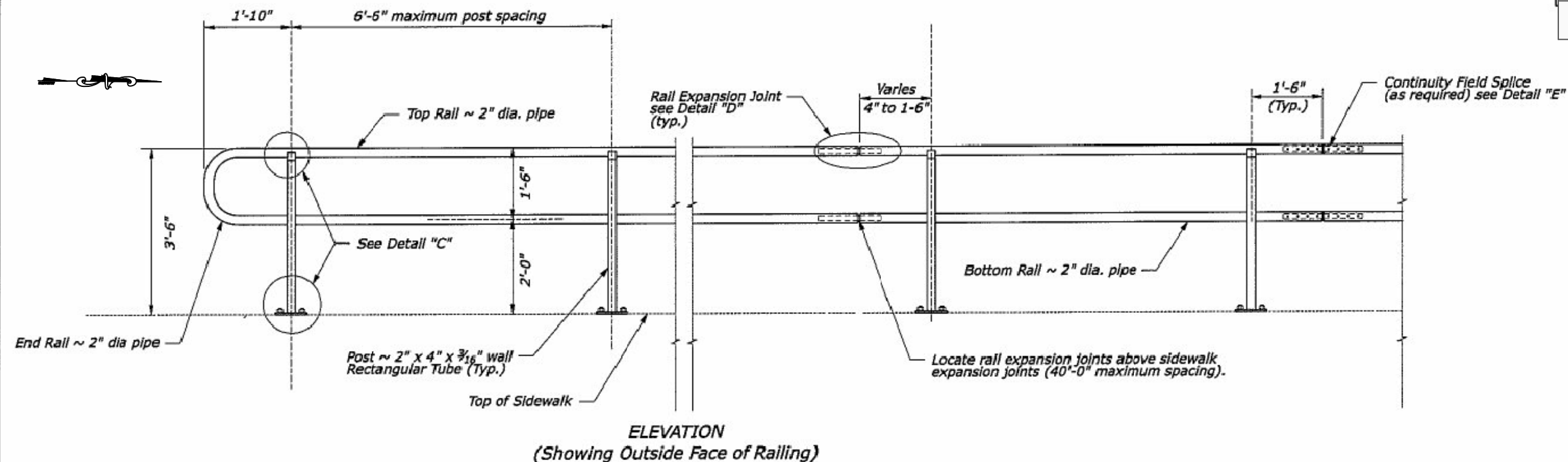
REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	G42	97



Note: Detail adopted/modified from Florida Department of Transportation Standard Drawing 850, STEEL PEDESTRIAN/ BICYCLE PICKET RAILING, dated 01/01/07.

DEPARTMENT OF PUBLIC WORKS OFFICE OF HIGHWAY ENGINEERING	
SIDEWALK PEDESTRIAN HANDRAIL	
Sheet No. 1	DETAIL 64601

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
SE	VI	VI-0081(002)	G42	97



Note: Detail adopted/modified from Florida Department of Transportation Standard Drawing 850, STEEL PEDESTRIAN/ BICYCLE PICKET RAILING, dated 01/01/07.

DEPARTMENT OF PUBLIC WORKS
OFFICE OF HIGHWAY ENGINEERING

SIDEWALK PEDESTRIAN
HANDRAIL

Sheet No. 1

DETAIL
64601

