DOLLAR GENERAL
LAKE CITY, FL
SECTION 34, TOWNSHIP 3 S
RANGE 17 E

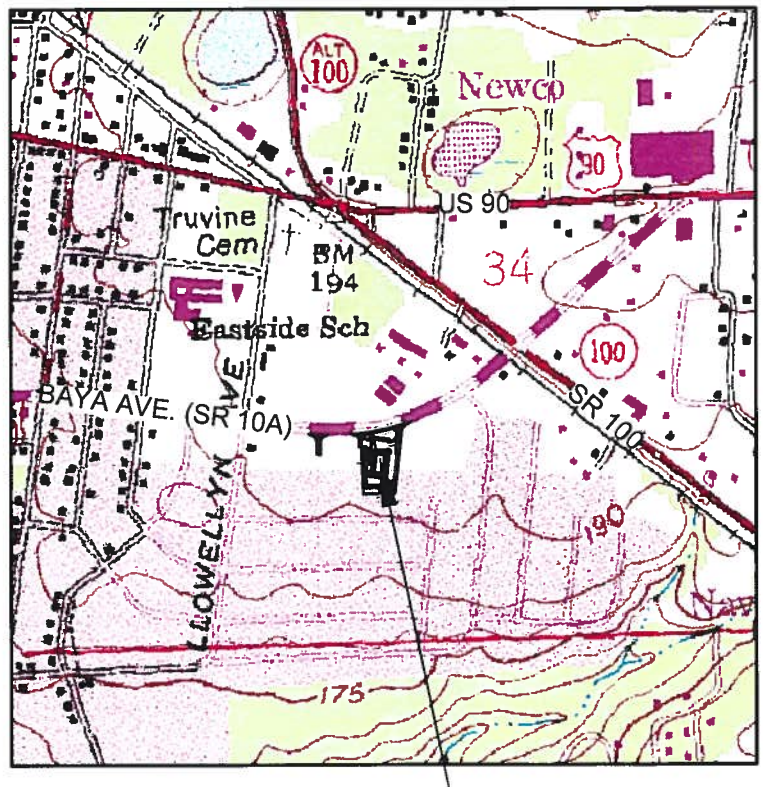
SHEET INDEX

FDOT DESIGN STANDARDS

INDEX NO. 105
INDEX NO. 515 SHEETS 5&6 OF 6
INDEX NO. 600 1-5 & 8-9 OF 10
INDEX NO. 612
INDEX NO. 613
INDEX NO. 11860
INDEX NO. 17302
INDEX NO. 17346 1 & 3 OF 13

FINAL CONSTRUCTION

T 3 S



R 17 E

PROJECT LOCATION

PLANS PREPARED FOR:

MUGGRIDGE WIMBERLY LIMITED LLC
RAY MUGGRIDGE
P.O. BOX 111
CAMILLA, GA 31730
(229) 336-5225

LEGEND

EXISTING		PROPOSED	
CONCRETE MONUMENT FOUND	■	CONCRETE MONUMENT SET	□
IRON PIPE FOUND	o	IRON PIPE SET	o
LIGHT STANDARD		LIGHT STANDARD	
POWER POLE		POWER POLE	
WATER VALVE		WATER VALVE	
FIRE HYDRANT		FIRE HYDRANT	
BACKFLOW PREVENTER		BACKFLOW PREVENTER	
CLEANOUT	O CO	CLEANOUT	O CO
MANHOLE		MANHOLE	O
GROUND CONTOUR	— 25 —	GROUND CONTOUR	— 25 —
WELL	W	DITCH BLOCK	
MONITORING WELL	M	FINISH ELEVATION	100.0
ELECTRIC BOX	E	FLOW ARROW	
TELEPHONE BOX	T	HANDICAP PARKING	
CABLE T.V. BOX	C	MITERED END	
D.O.T. MARKER FOUND	o	TREE	
CONCRETE		SEWER TAP	ST
SOIL BORING LOCATION		WATER METER	WM
SINGLE POST SIGN		BENCH MARK	
BENCH MARK		SILT FENCE	V V V
TRAFFIC LIGHT CABINET			

SYMBOLS & ABBREVIATIONS

ℙ	PROPERTY LINE	LF	LINEAR FEET
℄	CENTER LINE	IP	IRON PIPE
ℬ	BASE LINE	MH	MANHOLE
SAN	SANITARY SEWER	G	GAS
SS	STORM SEWER	UC	UNDERGROUND CABLE
E	ELECTRIC	OC	OVERHEAD CABLE
OE	OVERHEAD ELECTRIC	W	WATER LINE
UG	UNDERGROUND ELECTRIC	RCP	REINFORCED CONCRETE PIPE
OT	OVERHEAD TELEPHONE	RCEP	REINFORCED CONCRETE ELLIPTICAL PIPE
UT	UNDERGROUND TELEPHONE	CMP	CORRUGATED METAL PIPE
R=	RADIUS	CMAP	CORRUGATED METAL ARC PIPE
CO	CLEANOUT	BCCMP	BITUMINOUS COATED CORRUGATED METAL PIPE
BM	BENCH MARK	PE	POLYETHYLENE PIPE
F.O.C.	FIBER OPTIC CABLE	EOP	EDGE OF PAVEMENT
ROW	RIGHT OF WAY	F.F.E.	FINISH FLOOR ELEVATION

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COVER SHEET

REVISIONS:

JOB NUMBER: 060324MUG | DESIGNED BY: CM | DRAFTED BY: RD | CHECKED BY: GB | SIGNATURE & SEAL

DATE: 09/24/06

SHEET NO. 1

GENERAL NOTES

1. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS AT THE JOB SITE TO INSURE THAT ALL NEW WORK WILL FIT IN THE MANNER INTENDED ON THE PLANS. SHOULD ANY CONDITIONS EXIST THAT ARE CONTRARY TO THOSE SHOWN ON THE PLANS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF SUCH DIFFERENCES IMMEDIATELY AND PRIOR TO PROCEEDING WITH THE WORK.

2. THE CONTRACTOR SHALL COMPLY WITH ALL CONDITIONS AS SET FORTH BY THE ISSUED SUWANNEE RIVER WATER MANAGEMENT DISTRICT ENVIRONMENTAL RESOURCE PERMIT, AND FLORIDA DEPARTMENT OF TRANSPORTATION DRIVEWAY CONNECTION PERMIT.

3. THE CONTRACTOR SHALL MAINTAIN THE CONSTRUCTION SITE IN A SECURE MANNER. ALL OPEN TRENCHES AND EXCAVATED AREAS SHALL BE PROTECTED FROM ACCESS BY THE GENERAL PUBLIC.

4. ANY PUBLIC LAND CORNER WITHIN THE LIMITS OF CONSTRUCTION IS TO BE PROTECTED. IF A CORNER MONUMENT IS IN DANGER OF BEING DESTROYED AND HAS NOT BEEN PROPERLY REFERENCED, THE CONTRACTOR SHOULD NOTIFY THE ENGINEER.

5. THE SITE IS LOCATED IN SECTION 34, TOWNSHIP 3 SOUTH, RANGE 17 EAST, COLUMBIA COUNTY, FLORIDA.

6. THE CONTRACTOR SHALL IMPLEMENT ALL COMPONENTS OF THE EROSION AND SEDIMENTATION CONTROL PLAN PRIOR TO ANY EARTH DISTURBING ACTIVITIES. ALL COMPONENTS SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL ALL VEGETATION IS ESTABLISHED, THE ENTIRE PROJECT AREA IS STABILIZED AND THE OWNER HAS ACCEPTED OPERATION AND MAINTENANCE.

7. THE STORMWATER BASIN IS DESIGNED IN ACCORDANCE WITH CHAPTER 40B-4 F.A.C.

8. ALL SLOPES OF THE STORMWATER BASIN SHALL BE GRASSED. ALL SLOPES STEEPER THAN 3:1 SHALL BE STAPLED SOD.

9. ALL DISTURBED AREAS NOT SODDED SHALL BE SEEDED WITH A MIXTURE OF LONG-TERM VEGETATION AND QUICK GROWING SHORT-TERM VEGETATION FOR THE FOLLOWING CONDITIONS. FOR THE MONTHS FROM SEPTEMBER THROUGH MARCH, THE MIX SHALL CONSIST OF 70 POUNDS PER ACRE OF LONG-TERM SEED AND 20 POUNDS PER ACRE OF WINTER RYE. FOR THE MONTHS OF APRIL THOUGH AUGUST, THE MIX SHALL CONSIST OF 70 PER ACRE OF LONG-TERM SEED AND 20 POUNDS PER ACRE OF MILLET.

10. EXISTING DRAINAGE STRUCTURES WITHIN THE CONSTRUCTION LIMITS SHALL BE REMOVED.

11. THE LOCATION OF THE UTILITIES SHOWN IN THE PLANS ARE APPROXIMATE ONLY. THE EXACT LOCATION SHALL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION.

12. ALL SITE CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE COLUMBIA COUNTY LAND DEVELOPMENT REGULATIONS.

13. CONTRACTOR SHALL REVIEW AND BECOME FAMILIAR WITH ALL REQUIRED UTILITY CONNECTIONS PRIOR TO BIDDING. CONTRACTOR SHALL PROVIDE ALL WORK AND MATERIALS REQUIRED TO COMPLETE CONNECTION TO THE EXISTING UTILITIES. THIS INCLUDES BUT IS NOT LIMITED TO MANHOLE CORING, WET TAPS, PAVEMENT REPAIRS AND DIRECTIONAL BORING.

14. CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER CONTRACTORS WITHIN PROJECT AREA.

15. THE DRIVEWAY CONNECTION IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (CURRENT EDITION) AND THE ROADWAY AND TRAFFIC DESIGN STANDARDS (CURRENT EDITION).

16. THE TRAFFIC SIGNS AND PAVEMENT MARKINGS SHALL CONFORM TO THE REQUIREMENTS OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (CURRENT EDITION) AND THE FLORIDA DEPARTMENT OF TRANSPORTATION ROADWAY AND TRAFFIC DESIGN STANDARDS (CURRENT EDITION), ACCORDING TO STATE INDEXES 17302 & 17346. ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC LEAD-FREE PAINT.

17. MAINTENANCE OF TRAFFIC SHALL BE PERFORMED IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION ROADWAY AND TRAFFIC DESIGN STANDARDS 600 & 625.

18. THE CONTRACTOR SHALL OBTAIN THREE DENSITY TESTS ACCORDING TO THE FDOT STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION (CURRENT EDITION). LIMEROCK SHALL BE COMPACTED TO 98% OF THE MAXIMUM DENSITY AS DETERMINED BY AASHTO T 180. A COPY OF THE TESTS SHALL BE SUBMITTED TO FDOT BEFORE STARTING ANY PAVING OPERATIONS.

19. ALL AREAS DISTURBED WITHIN FDOT RIGHT-OF-WAY SHALL BE RESODDED WITH "CERTIFIED COASTAL BERMUDA GRASS SOD". ALL SOD SHALL BE INSTALLED TO FDOT SATISFACTION BEFORE PAVING MAY COMMENCE.

20. ALL FDOT RIGHT-OF-WAY RESTORATION, GRASS SOD PLACEMENT AND/OR SEEDING & STRAW MULCH REQUIRED UNDER THIS APPROVED STATE ACCESS PERMIT SHALL BE IN PLACE AND HAVE RECEIVED TWO WATERINGS AND ALSO HAVE RECEIVED A PASSING INSPECTION FOR PERMIT COMPLIANCE FOR THIS ITEM BEFORE ANY TYPE OF ASPHALT PAVING OR CONCRETE DRIVEWAYS CAN COMMENCE UPON STATE FDOT RIGHT-OF-WAY PROPERTY. BE AWARE THAT NO PAVING OR CONCRETE POURS CAN COMMENCE UNDER THIS APPROVED UNTIL ALL OF THE ABOVE RESTORATION AND GRASS SODDING PROVISIONS HAVE BEEN MET AND RECEIVED A PASSING INSPECTION BY THE LOCAL FDOT PERMITS OFFICE HAVING PERMITTING AUTHORITY OVER SAID PROJECT.

21. ALL AREAS OF THE STATE RIGHT-OF-WAY WITHIN THE LIMITS OF CONSTRUCTION WITH A PROPOSED FINISHED GRADE SLOPE OF 1:4 OR STEEPER SHALL BE COMPLETELY COVERED WITH CERTIFIED COASTAL BERMUDA GRASS OR AN FDOT APPROVED ALTERNATIVE GRASS SOD. THIS PROVISIONS SHALL BE MET A MINIMUM OF 24 HOURS IN ADVANCE OF ANY PLANNED PAVING OR CONCRETE POUR THAT IS APPROVED UNDER THE FDOT ACCESS OR DRAINAGE PERMIT. REFER TO THE ATTACHED PERMIT COVER LETTER AND/OR APPROVED SITE PLAN OR PLAN NOTES ON R/W RESTORATION FOR ADDITIONAL RESTORATION PROVISIONS AND OTHER SODDING SPECIFICATIONS.

22. THE PERMITTEE OR LEGAL REPRESENTATIVE SHALL CONTACT THE LOCAL STATE OF FLORIDA FDOT MAINTENANCE PERMITS OFFICE HAVING JURISDICTION OVER THIS APPROVED PERMIT; A MINIMUM OF 48 HOURS IN ADVANCE OF THE PLANNED ACTIVATION OF SAID ACCESS PERMIT FOR THE EXPLICIT PURPOSE OF SETTING UP THE MANDATORY PRE-CONSTRUCTION MEETING WITH ALL PARTIES INVOLVED IN THE CONSTRUCTION OF THIS PROJECT. CONTACT CAN BE MADE BY CALLING 386-961-7180 OR 7193 OR 7148 TUESDAY THROUGH FRIDAY, 7:00 A.M. TO 5:00 P.M. FAILURE ON THE PERMITTEE'S OR HIS GENERAL CONSTRUCTION CONTRACTOR'S PART TO MAKE ADVANCE CONTACT FOR A MUTUALLY AGREED TO PRE-CONSTRUCTION MEETING SHALL BE REASON FOR SUSPENSION OF THE APPROVED FDOT ACCESS PERMIT.

23. ALL PERMITTED AND PROPOSED WORK/CONSTRUCTION UPON STATE FDOT RIGHT-OF-WAY SHALL CONFORM TO THE STATE OF FLORIDA'S MOST CURRENT ROADWAY AND TRAFFIC DESIGN STANDARDS MANUAL AND THE STATE FDOT'S STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND THE APPROVED PERMIT PROVISIONS, COVER LETTER AND GENERAL AND SPECIAL PERMIT PROVISIONS.

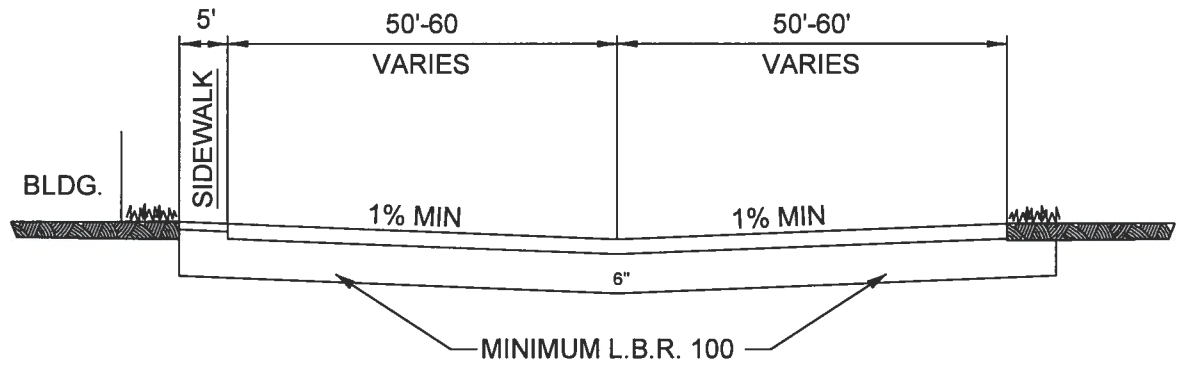
24. IF DRAINAGE CONNECTION HAS BEEN PERMITTED AND IS REQUIRED AS A PROVISION OF THE APPROVED FDOT SITE PLAN AND PHYSICAL DRAINAGE CONNECTION IS REQUIRED INTO EXISTING FDOT STRUCTURE(S); THEN THE ACTUAL ENTRY SHALL BE MADE BY SMOOTH CORE METHOD ONLY, WITH NO MORE THAN MAXIMUM OF 0.500 OF AN INCH OVERBORE ALLOWS. THE PERMITTEE SHALL MAKE ADVANCE PREPARATIONS TO HAVE THE FDOT PERMITS INSPECTOR ON SITE AT THE TIME OF COMMENCEMENT OF ENTRY TO ENSURE WATER TIGHT SEAL IS MADE TO FDOT STANDARDS. NEITHER THE PERMITTEE NOR ANY REPRESENTATIVE OF THE PERMITTEE SHALL CONDUCT THIS PHASE OF THE PROJECT WITHOUT A FDOT INSPECTOR BEING ON SITE. ALL PERMITTED AND APPROVED OR REQUIRED PAVEMENT MARKINGS SHALL BE CONSTRUCTED WITH LEAD-FREE, THERMOPLASTIC MATERIALS IN ACCORDANCE WITH FDOT INDEX NO. 17346 UNDER SPECIAL PAVEMENT MARKINGS.

25. ALL PERMITTED ABOVEGROUND SIGNAGE SHALL CONFORM TO FDOT INDEX NO. 11860 AND 17302. ABOVEGROUND POSTED SIGNS AND SIGN BRACKET ATTACHMENTS SHALL BE INSTALLED PRIOR TO THE FINAL DRIVEWAY CONSTRUCTION IN ACCORDANCE WITH FDOT INDEXES 11860 AND 17302.

26. FAILURE TO ABIDE BY THE ATTACHED GENERAL, SPECIAL PERMIT PROVISIONS AS WELL AS THE ATTACHED COVER LETTER (A LEGAL PART OF THE PERMIT,) SHALL BE REASON TO SUSPEND ANY OR ALL FDOT APPROVED PERMITTED ACTIVITIES UNTIL SUCH TIME THAT THE SITUATION HAS BEEN CORRECTED TO FDOT SATISFACTION.

27. CONTRACTOR SHALL PROVIDE AN AS-BUILT SURVEY MEETING THE REQUIREMENTS OF CHAPTER 61G17 F.A.C. FOR THE STORMWATER MANAGEMENT SYSTEMS. INCLUDE HORIZONTAL AND VERTICAL DIMENSIONAL DATA SO THAT IMPROVEMENTS ARE LOCATED AND DELINEATED RELATIVE TO THE BOUNDARY. PROVIDE SUFFICIENT DETAILED DATA TO DETERMINE WHETHER THE IMPROVEMENTS WERE CONSTRUCTED IN ACCORDANCE WITH THE PLANS. SUBMIT THE SURVEY TO THE ENGINEER ON REPRODUCIBLE 20LB. VELLUM.

28. THIS PROJECT IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE F.D.O.T. STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (CURRENT EDITION) AND THE F.D.O.T. DESIGN STANDARDS (CURRENT EDITION) UNLESS OTHERWISE NOTED.



2 " TYPE SP 9.5 STRUCTURAL COURSE
6" LIMEROCK BASE COURSE

PARKING APRON TYPICAL SECTION

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GENERAL NOTES & TYPICALS DOLLAR GENERAL

REVISIONS:

JOB NUMBER: 060324MUG
DESIGNED BY: CM
DRAFTED BY: RD
CHECKED BY: GB
SIGNATURE & SEAL
DATE: 09/18/06
SHEET NO. 2

EXISTING DRIVE TO BE REMOVED DURING DEVELOPMENT OF SITE

BENCHMARK# 1
TOP OF SET NAIL & DISK
LB6685
EL= 191.26

BAYA AVE. (SR 10A)

238.06'

180.24'

140.29'

NOT PART
PROPERTY OWNED BY
RICHARD C. COLE &
DANIEL CRAPPS

NOT PART
TERRY W. DEKLE &
TERESA C

SS

BENCHMARK# 2
TOP OF REBAR & CAP
PSM4804
EL= 189.65

GRAPHIC SCALE

60 0 30 60 120 FEET

NOTE:
STANDARD PARKING:
1 STALL PER 150 S.F. PER 70% OF TOTAL FLOOR SPACE
REQUIRED PARKING STALLS=54
PROVIDED PARKING STALLS=56

AREAS
TOTAL PROPERTY AC=1.88
TOTAL BUILDING S.F.=11,600
TOTAL SIDEWALK S.F.=1,300
TOTAL IMPERVIOUS S.F.=34,117

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OVERALL SITE PLAN
DOLLAR GENERAL

REVISIONS:

JOB NUMBER: 060324MUG
DESIGNED BY: CM
DRAFTED BY: CM
CHECKED BY: GB
SIGNATURE & SEAL
DATE: 09/18/06
SHEET NO. 3

HATCHING DENOTES REMOVAL OF EXISTING PAVEMENT AT THESE SECTIONS UP TO BAYA AVE. ROW

HATCHING DENOTES EXISTING PAVEMENT TO BE SAND SEALED AND OVERLAYED

NOTE: 24" STOP BARS TO BE PLACED AT ALL INTERSECTIONS IN ACCORDANCE WITH FDOT INDEX 17346.

CONSTRUCT ± 23 LF 15" BCCMP PE PIPE

EXISTING STORMWATER BASIN

CONSTRUCT ± 173 LF 15" BCCMP PE PIPE

SEPTIC DRAIN FIELD

PROPERTY BOUNDARY

10' PROPERTY SETBACK

INV. =187.00

INV. =187.72

SAW CUT EXISTING PAVEMENT TO THIS POINT & TIE PROPOSED 2" TYPE SP 9.5 PAVEMENT INTO BACK OF CURB

PAVEMENT TO BE SAND SEALED AND OVERLAYED

CONSTRUCT 25 LF DOUBLE YELLOW STRIPING

CONCRETE FLUME (SEE DETAIL SHEET #8)

DUMPSTER PAD (SEE DETAIL SHEET# 8)

CONSTRUCT 18 LF 24" WHITE STOP BAR

SS

PROPOSED STORMWATER BASIN

1250 SQ. FT.

1250 SQ. FT.

9100 SQ. FT.

CONSTRUCT ± 103 LF 1" PVC WATER PIPE

CONSTRUCT ± 104 LF 1" PVC WATER PIPE

CONSTRUCT ± 109 LF 2" PVC WATER PIPE

3 WATER METERS (SEE DETAIL SHEET #10)

CONTRACTOR TO FIELD VERIFY LOCATION OF EXISTING WATERMAIN

20' PROPERTY SETBACK

BAYA AVE.

CONSTRUCT 100 LF DOUBLE YELLOW STRIPING

CONSTRUCT 31 LF 24" WHITE STOP BAR

10' PROPERTY SETBACK

DUMPSTER PAD (SEE DETAIL SHEET# 8)

EXTEND 15FT ACCESS EASEMENT

PAVEMENT TO BE SAND SEALED AND OVERLAYED

SAW CUT EXISTING PAVEMENT TO THIS POINT & TIE PROPOSED 2" TYPE SP 9.5 PAVEMENT INTO BACK OF CURB

GRAPHIC SCALE

40 0 20 40 80 FEET

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SITE PLAN

DOLLAR GENERAL

REVISIONS:

JOB NUMBER: 0603244MUG
DESIGNED BY: CM
DRAFTED BY: CM
CHECKED BY: GB
SIGNATURE & SEAL
DATE: 09/18/06
SHEET NO. 4

FDOT CONNECTION NOTES:

1. THE EXISTING ASPHALT PAVED SHOULDER SHALL BE MECHANICALLY SAW CUT AND REMOVED AS WELL AS ALL PRE-EXISTING SUBGRADE MATERIALS WITHIN THE LIMITS OF THE PROJECT IMPROVEMENTS WORK ZONE OR AS MAY BE CALLED FOR UNDER THE STATE FDOT PERMIT.

2. ALL PERMITTED PAVEMENT STRIPPING PERTAINING TO THIS ACCESS PERMIT SHALL REQUIRE CERTIFIED LEAD FREE, THERMOPLASTIC MARKING MATERIALS AS THE FINAL PLACEMENT ITEM. TEMPORARY TRAFFIC BEARING SHALL BE REQUIRED TO BE IN PLACE 30 MINS. BEFORE OFFICIAL SUNDOWN. BOTH TEMPORARY TRAFFIC BEARING PAINTS AND THERMOPLASTIC MARKING MATERIALS SHALL BE LEAD FREE AND SHALL MEET/OBTAIN FDOT MINIMUM SPECIFICATIONS FOR NIGHT REFLECTIVITY. TEMPORARY RPM'S SHALL BE INSTALLED DURING BOTH TEMPORARY AND PERMANENT STRIPING PHASES. REMOVAL OF EXISTING STRIPING SHALL BE ACCOMPLISHED USING THE "HYDRO-BLAST" METHOD.

3. FAILURE BY THE PERMITEE AND/OR HIS/HER CONTRACTOR TO HAVE A CERTIFIED STRIPING CREW ON SITE BEFORE THE START OF PAVING CAN BE REASON TO SUSPEND THE APPROVED PERMIT UNTIL SUCH TIME AS THE PERMITEE AND/OR HIS/HER CONTRACTOR CORRECTS THE SITUATION TO THE SATISFACTION OF THE ON-SITE STATE FDOT PERMITS PERSONNEL/INSPECTOR.

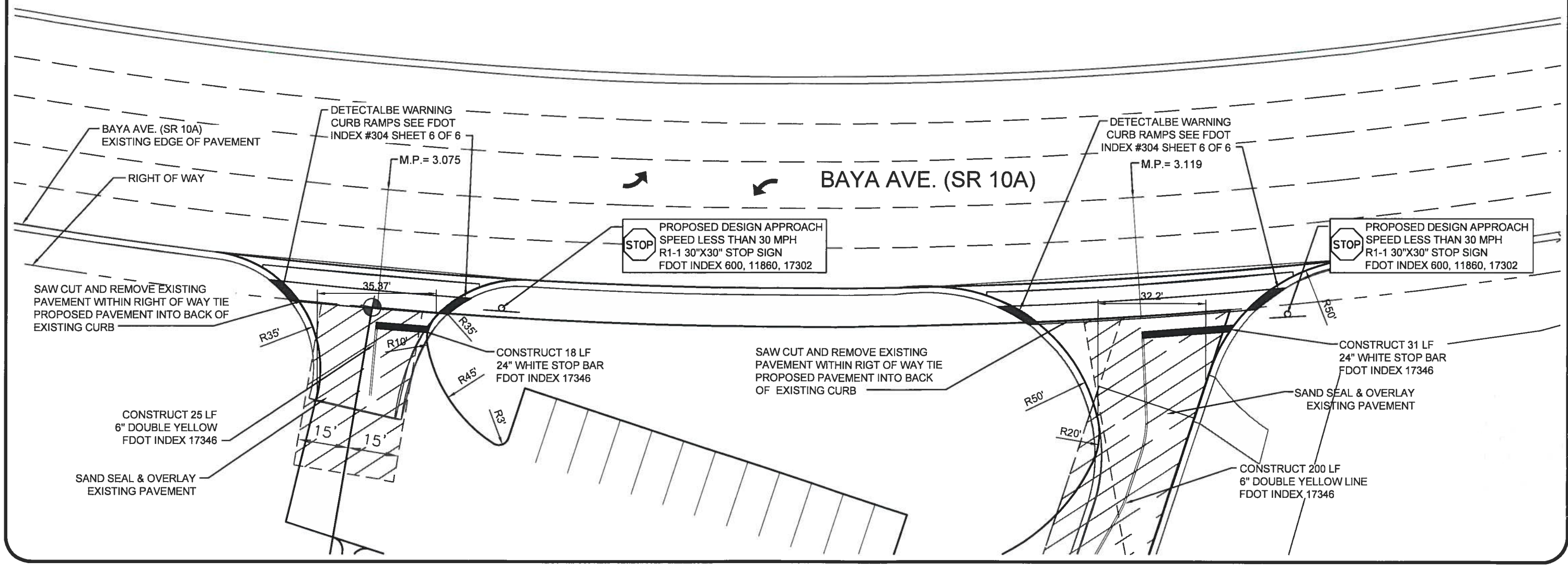
4. FOR MAINTENANCE OF TRAFFIC PLAN REFER TO FDOT INDEX SHEETS 602 AND 603.

5. ENTIRE DISTURBED FDOT R/W SHALL RECIEVE COMPLETE COVERAGE OF COASTAL BERMUDA SOD.

NOTE: 24" STOP BARS TO BE PLACED AT ALL INTERSECTIONS IN ACCORDANCE WITH FDOT INDEX 17346.

GRAPHIC SCALE

30 0 15 30 60 FEET



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FDOT CONNECTION

DOLLAR GENERAL

REVISIONS:

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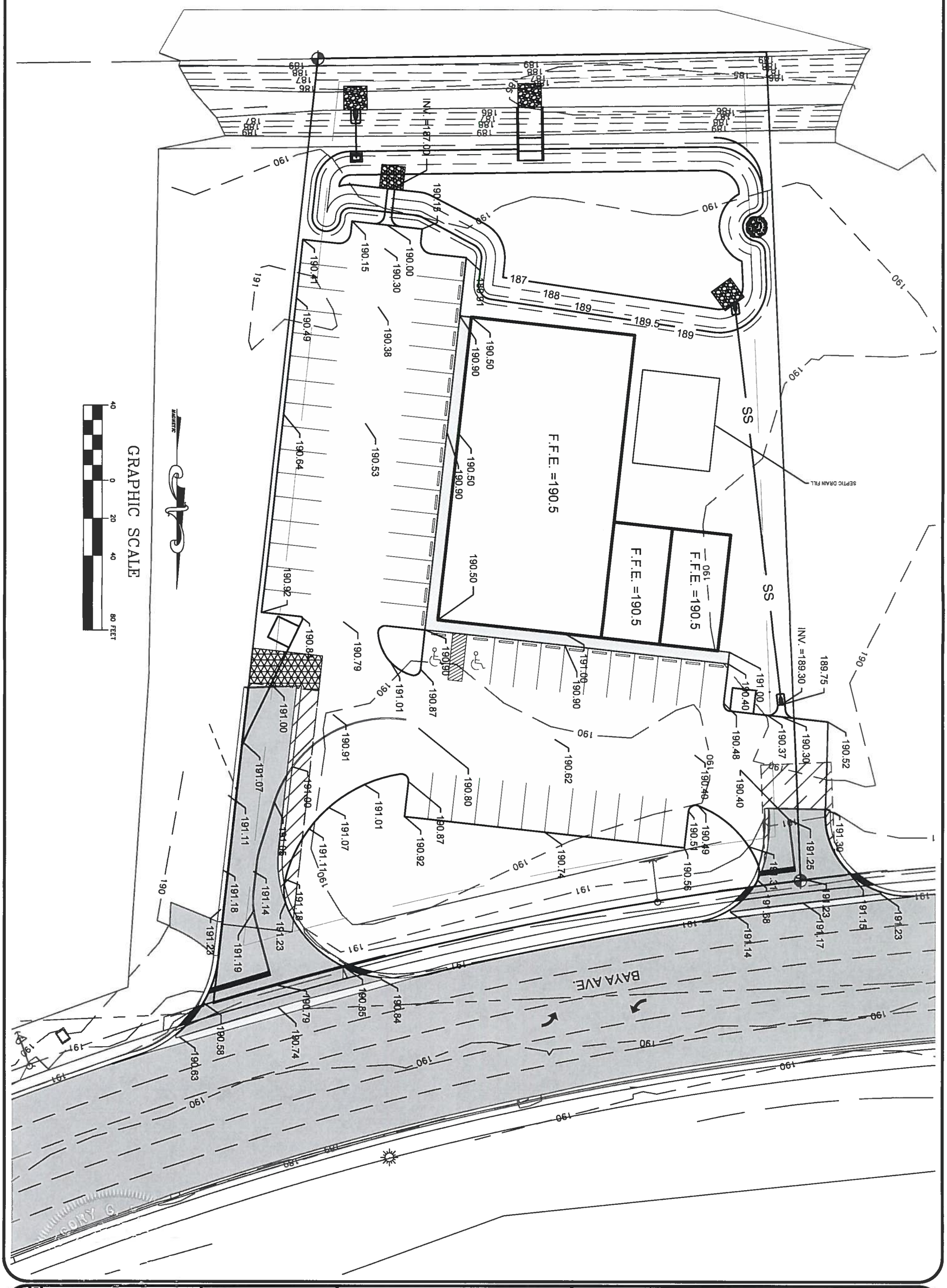
SHEET NO. 5



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SHEET NO. 6

GRADING PLAN

DOLLAR GENERAL

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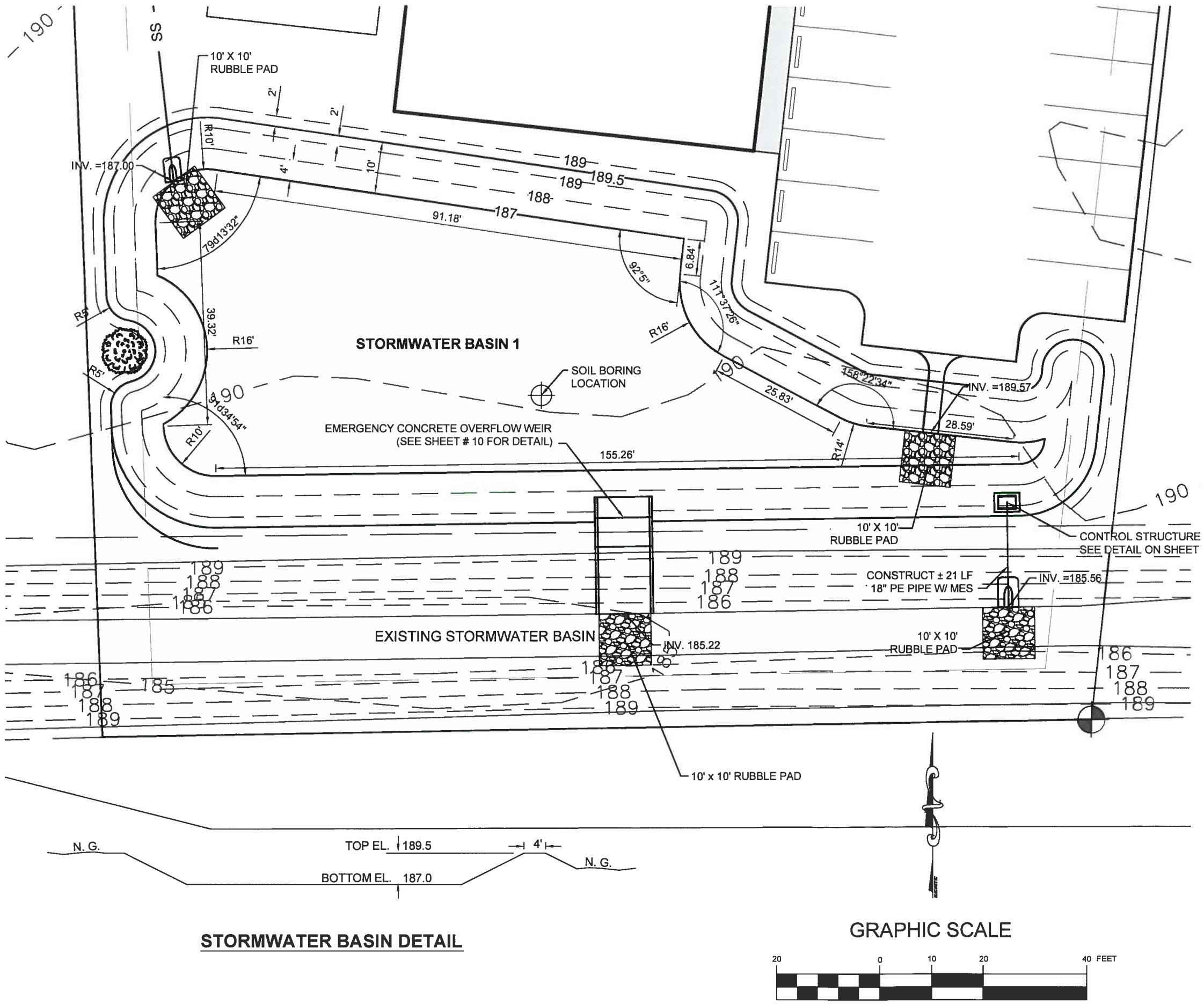


STORMWATER BASIN DETAIL

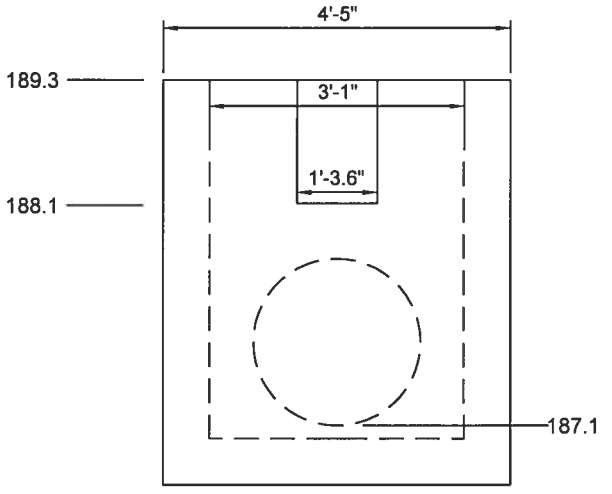
GRAPHIC SCALE

20 0 10 20 40 FEET

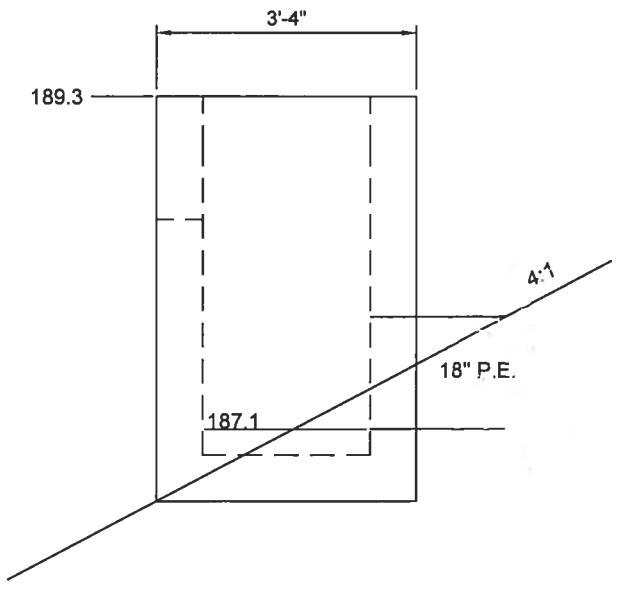
SOIL DATA

- DARK GREYISH TAN SAND WITH SILT, TRACE ORGANICS (SP/SM)
- DARK TAN SAND WITH SILT, (SP/SM)
- TAN SAND (SP)
- LIGHT GREYISH TAN SAND (SP) KV = 20.1 ft /day @ 5.3 ft.
- LIGHT TAN TO BROWN SAND, TRACE CEMENTED SAND (SP)
- LIGHT GREYISH TAN SAND (SP)

WATER TABLE @6.5'



TYPE "C" DBI CONTROL STRUCTURE DETAIL



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STORMWATER BASIN PLAN
DOLLAR GENERAL

REVISIONS:

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SHEET NO. 7

EROSION CONTROL NOTES

1. THIS EROSION AND SEDIMENTATION CONTROL PLAN COMPLIES WITH THE REQUIREMENTS OF THE "FLORIDA DEVELOPMENT MANUAL" AND THE "FLORIDA EROSION AND SEDIMENT CONTROL INSPECTOR'S MANUAL".

2. THE CONTRACTOR SHALL ADHERE TO COLUMBIA COUNTY, SRWMD, AND OTHER GOVERNING AUTHORITIES FOR EROSION AND SEDIMENT CONTROL REGULATIONS. IF THE CONTRACTOR NEEDS TO CHANGE THIS PLAN TO MORE EFFECTIVELY CONTROL EROSION AND SEDIMENTATION, THE CONTRACTOR SHALL USE BMP's FROM THE "FLORIDA EROSION AND SEDIMENT CONTROL INSPECTOR'S MANUAL".

3. THE CONTRACTOR SHOULD MAKE MINOR REVISIONS TO THIS PLAN TO MEET ACTUAL FIELD CONDITIONS.

4. SEDIMENT AND EROSION CONTROL FACILITIES, STORM DRAINAGE FACILITIES AND DETENTION BASINS SHALL BE INSTALLED PRIOR TO ANY OTHER CONSTRUCTION.

5. EROSION CONTROL MEASURES SHALL BE INSPECTED WEEKLY AND AFTER EACH RAINFALL AND REPLACED AS NECESSARY.

6. SEDIMENT AND EROSION CONTROL MEASURES SHALL NOT BE REMOVED UNTIL ALL CONSTRUCTION IS COMPLETE AND UNTIL A PERMANENT GROUND COVER HAS BEEN ESTABLISHED.

7. ALL OPEN DRAINAGE SWALES SHALL BE GRASSED AND RIPRAP SHALL BE PLACED AS REQUIRED TO CONTROL EROSION.

8. SILT FENCES SHALL BE LOCATED ON SITE TO PREVENT SEDIMENT AND EROSION FROM LEAVING PROJECT LIMITS.

9. CONTRACTOR SHALL PLACE A DOUBLE ROW OF SILT FENCE IN AREAS WHERE RUNOFF FROM DISTURBED AREAS MAY ENTER WETLANDS.

10. DURING CONSTRUCTION AND AFTER CONSTRUCTION IS COMPLETE, ALL STRUCTURES SHALL BE CLEANED OF ALL DEBRIS AND EXCESS SEDIMENT.

11. ALL GRADED AREAS SHALL BE STABILIZED IMMEDIATELY WITH A TEMPORARY FAST-GROWING COVER AND/OR MULCH.

12. A PAD OF RUBBLE RIP RAP SHALL BE PLACED AT THE BOTTOM OF ALL COLLECTION FLUMES AND COLLECTION PIPE OUTLETS. GRANITE OR LIMESTONE RIPRAP IS REQUIRED, NO BROKEN CONCRETE WILL BE ACCEPTED.

13. ALL SIDE SLOPES STEEPER THAN 3:1 SHALL BE ADEQUATELY PROTECTED FROM EROSION THROUGH THE USE OF HAY BALES OR SODDING.

14. ALL STABILIZATION PRACTICES SHALL BE INITIATED AS SOON AS PRACTICABLE IN AREAS OF THE JOB WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY STOPPED, BUT IN NO CASE SHALL THE DISTURBED AREA BE LEFT UNPROTECTED FOR MORE THAN THREE DAYS.

15. ALL WASTE GENERATED ON THE PROJECT SHALL BE DISPOSED OF BY THE CONTRACTOR IN AREAS PROVIDED BY CONTRACTOR.

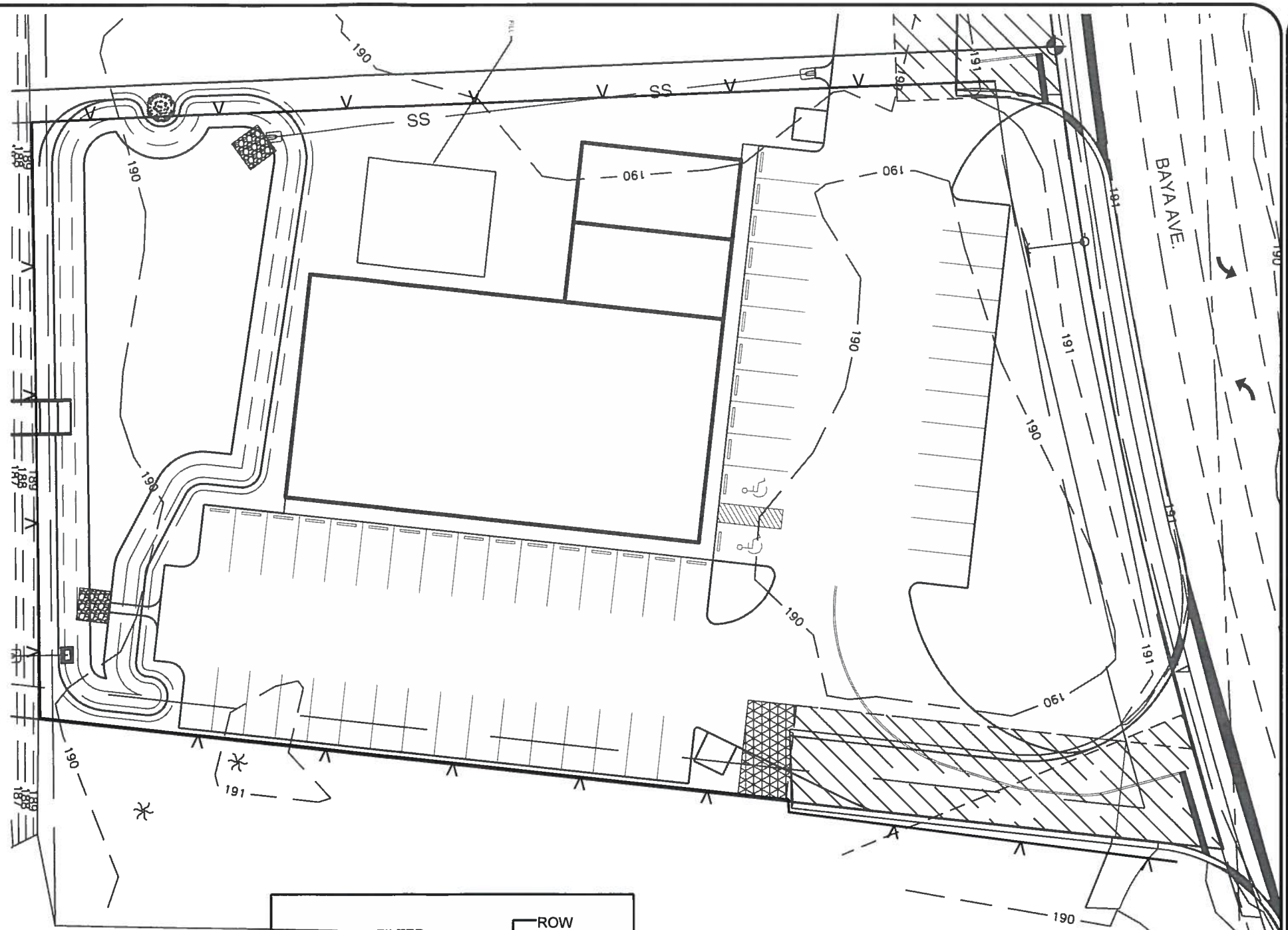
16. LOADED HAUL TRUCKS SHALL BE COVERED WITH TARPS.

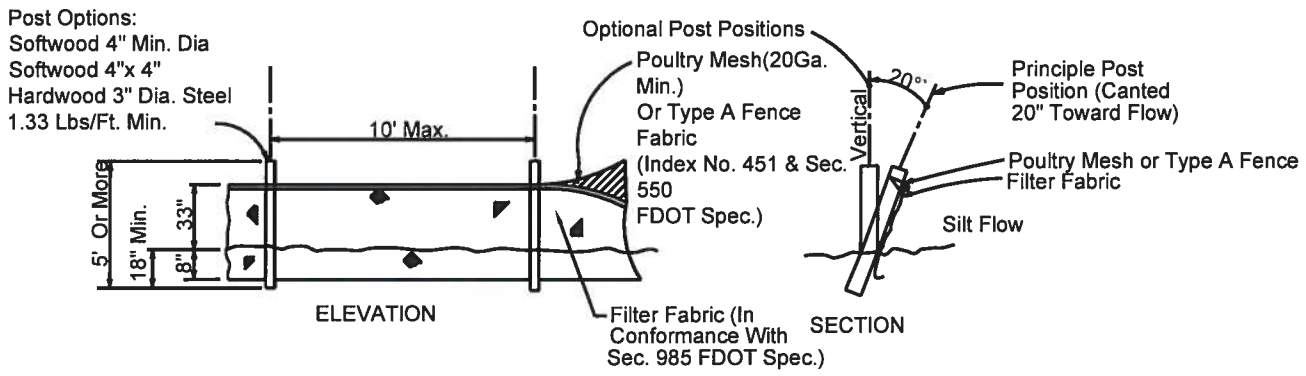
17. EXCESS DIRT SHALL BE REMOVED DAILY.

18. THIS PROJECT SHALL COMPLY WITH ALL WATER QUALITY STANDARDS. PERMIT REQUIRED FROM SRWMD HAS BEEN OBTAINED.

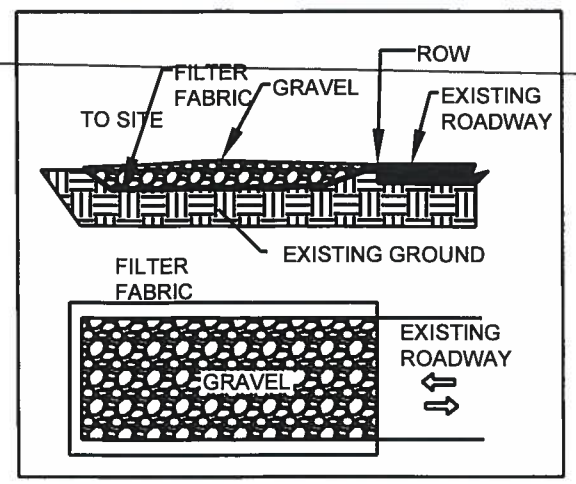
19. QUALIFIED PERSONNEL SHALL INSPECT THE AREA USED FOR STORAGE OF STOCKPILES, THE SILT FENCE AND STRAW BALES, THE LOCATION WHERE VEHICLES ENTER OR EXIT THE SITE, AND THE DISTURBED AREAS THAT HAVE NOT BEEN FINALLY STABILIZED, AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM OF 0.2 INCHES OR GREATER.

20. SITES THAT HAVE BEEN FINALLY STABILIZED WITH SOD OR GRASSING SHALL BE INSPECTED AT LEAST ONCE EVERY WEEK.





TYPE IV SILT FENCE



TEMPORARY GRAVEL CONSTRUCTION ENTRANCE DETAIL

GRAPHIC SCALE

40 0 20 40 80 FEET

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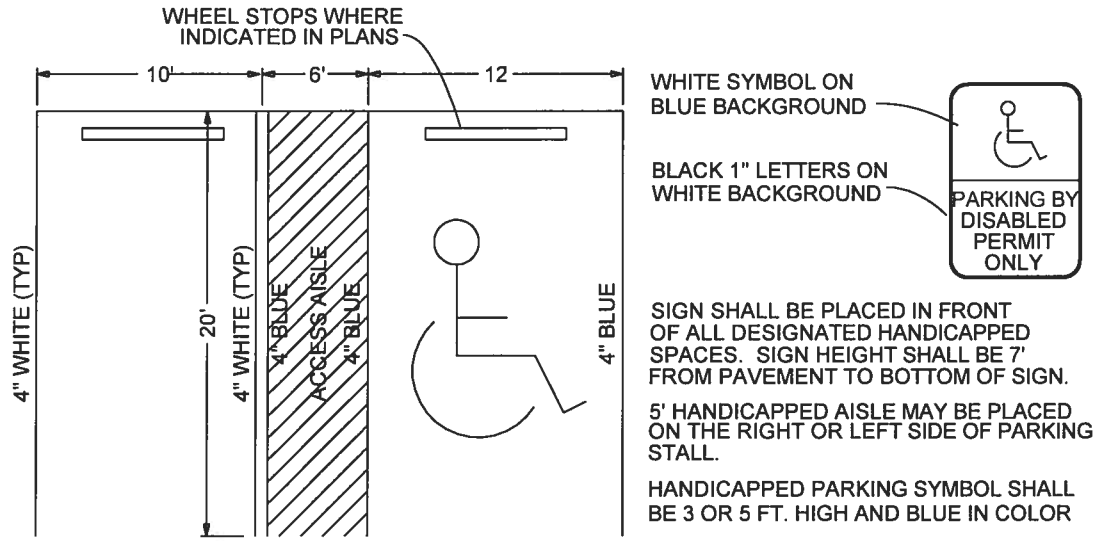
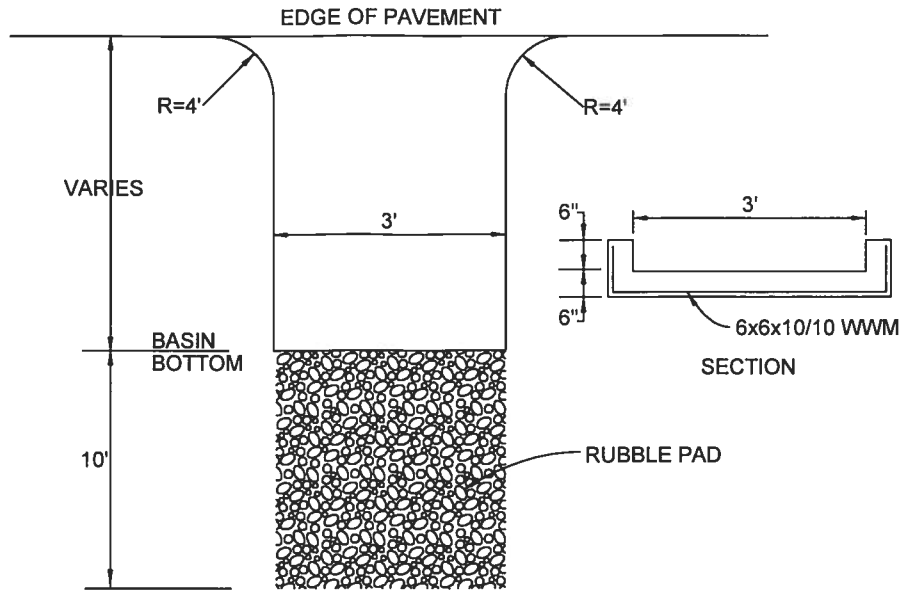
EROSION CONTROL PLAN
DOLLAR GENERAL

REVISIONS:

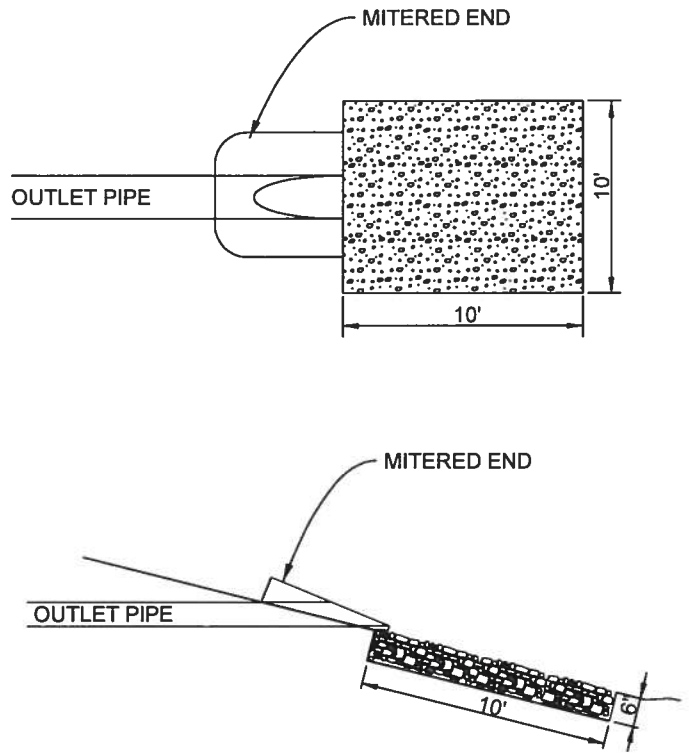
JOB NUMBER: 060324MUG
DESIGNED BY: CM
DRAFTED BY: RD
CHECKED BY: GB
SIGNATURE & SEAL
DATE: 09/18/06
SHEET NO. 8



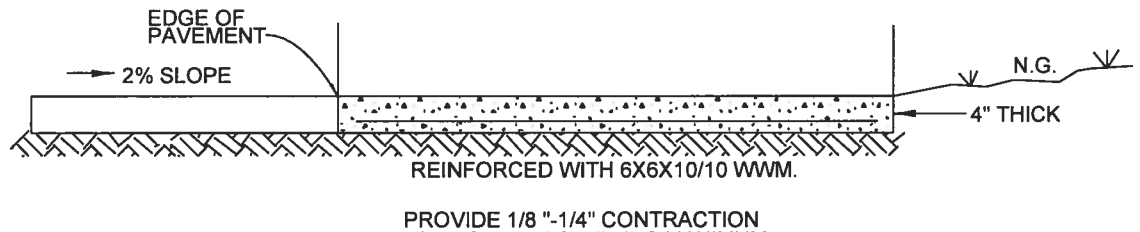
PARKING STALL DETAIL



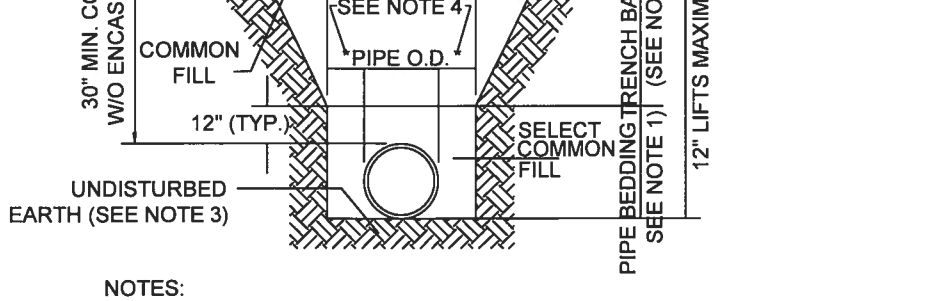
CONCRETE FLUME DETAIL



RUBBLE PAD DETAIL

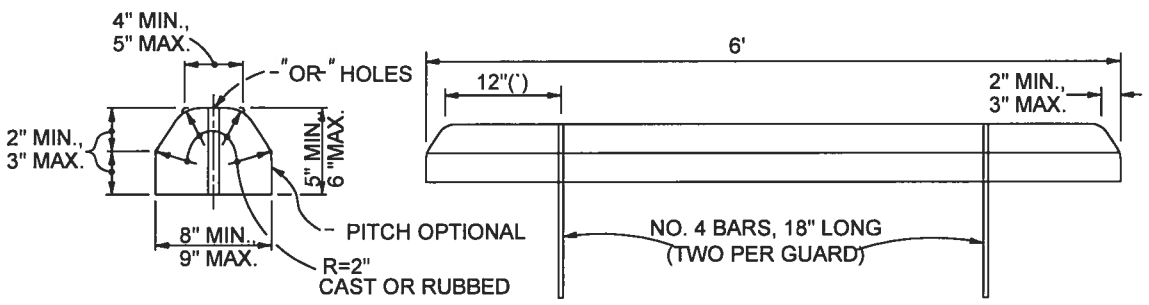


STANDARD SIDEWALK DETAIL

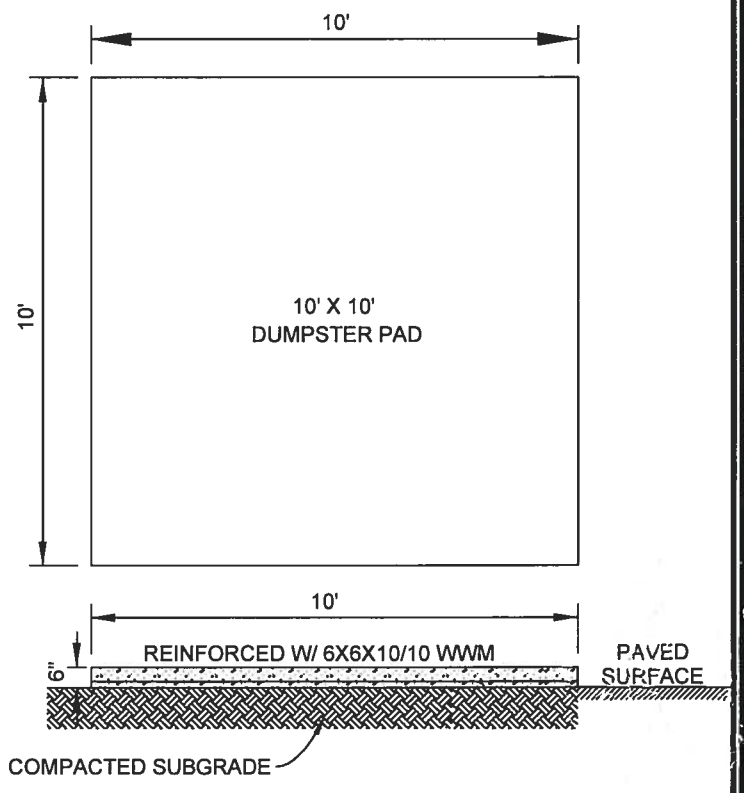


NOTES:
1. PIPE BEDDING: SELECT COMMON FILL COMPACTED TO 95% OF THE MAXIMUM DENSITY AS PER AASHTO T-180.
2. TRENCH BACKFILL: COMMON FILL COMPACTED TO 95% OF THE MAXIMUM DENSITY AS PER AASHTO T-180.
3. PIPE BEDDING UTILIZING SELECT COMMON FILL OR BEDDING ROCK WILL BE REQUIRED IF OVER-EXCAVATION OCCURS.
4. (*): 15" MAX. FOR PIPE DIAMETER LESS THAN 24", AND 24" MAX. FOR PIPE DIAMETER 24" AND LARGER.
5. WATER SHALL NOT BE PERMITTED IN THE TRENCH DURING CONSTRUCTION.
6. ALL PIPE TO BE INSTALLED WITH BELL FACING UPSTREAM TO THE DIRECTION OF THE FLOW.
7. PROVIDE TRENCH SLOPING AND BRACING AS REQUIRED FOR SAFETY.
8. FINAL RESTORATION IN IMPROVED AREAS SHALL BE IN COMPLIANCE WITH ALL APPLICABLE REGULATIONS OF GOVERNING AGENCIES. SURFACE RESTORATION WITHIN PAVED AREAS SHALL COMPLY WITH THE REQUIREMENTS OF THE ROAD CONSTRUCTION SPECIFICATIONS.

TRENCH AND BACKFILL DETAIL



CONCRETE WHEEL STOP



10' X 10' DUMPSTER PAD DETAIL

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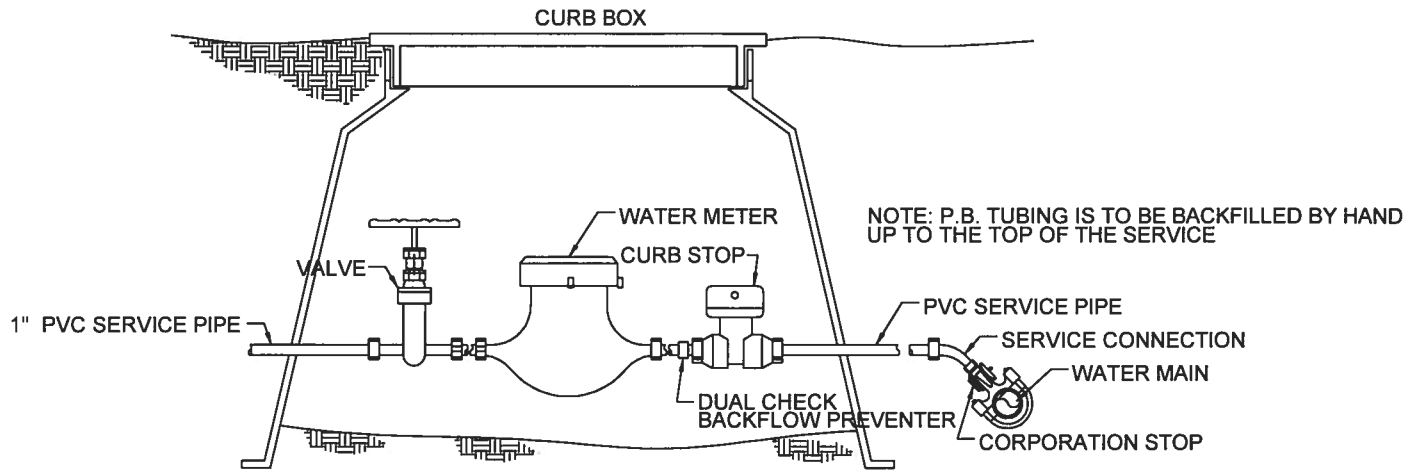
MISC. DETAILS

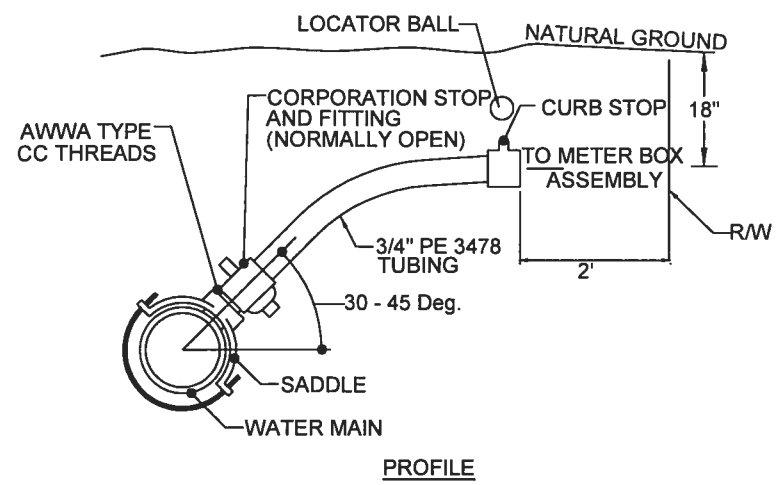
DOLLAR GENERAL

REVISIONS:

JOB NUMBER: 0603234MUG
DESIGNED BY: CM
DRAFTED BY: RD
CHECKED BY: GB
SIGNATURE & SEAL
DATE: 09/18/06
SHEET NO. 9

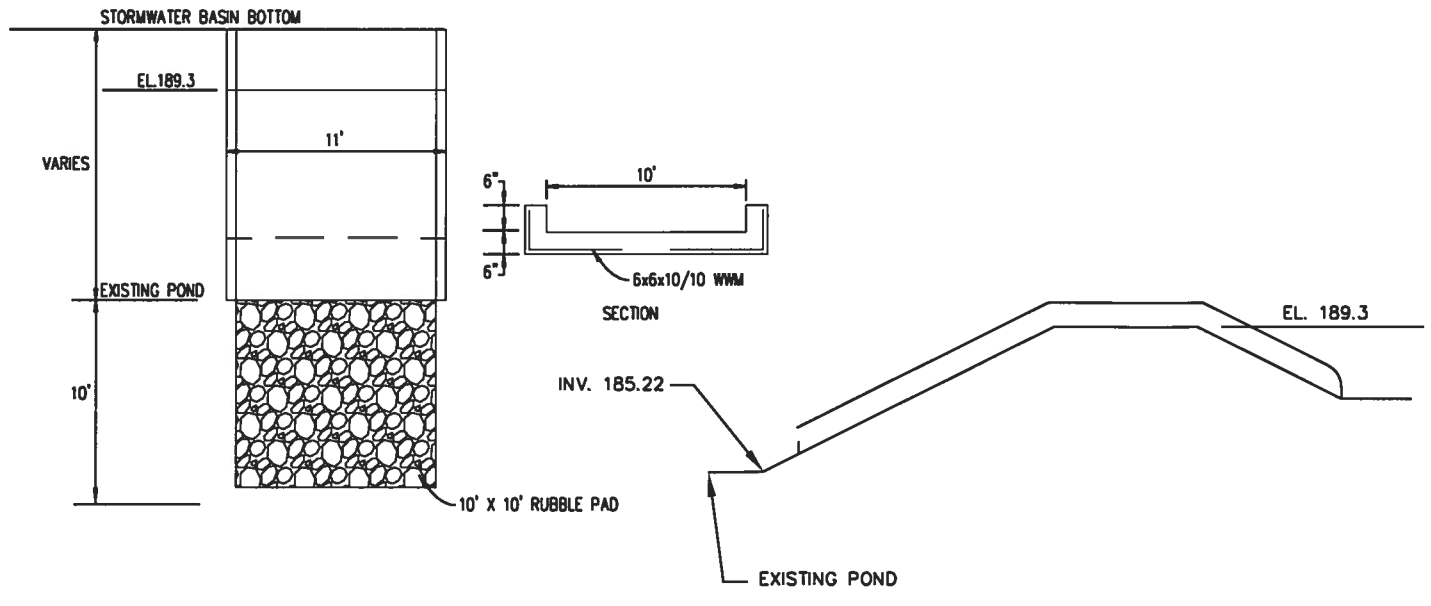


WATER SERVICE CONNECTION & METER



PROFILE

WATER SERVICE CONNECTION DETAILS



EMERGENCY CONCRETE OVERFLOW WEIR DETAIL

Bailey Bishop & Lane, Inc.
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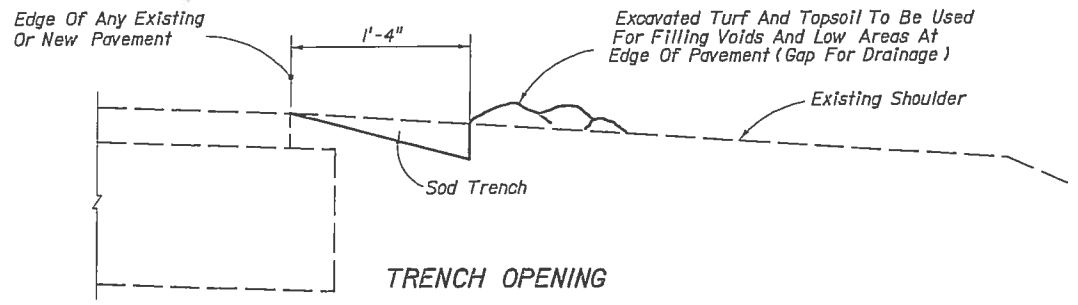
MISC. DETAILS

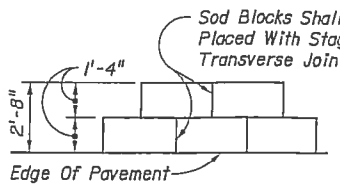
DOLLAR GENERAL

REVISIONS:

JOB NUMBER: 060324MUG
DESIGNED BY: CM
DRAFTED BY: RD
CHECKED BY: GB
SIGNATURE & SEAL
DATE: 09/18/06
SHEET NO. 10

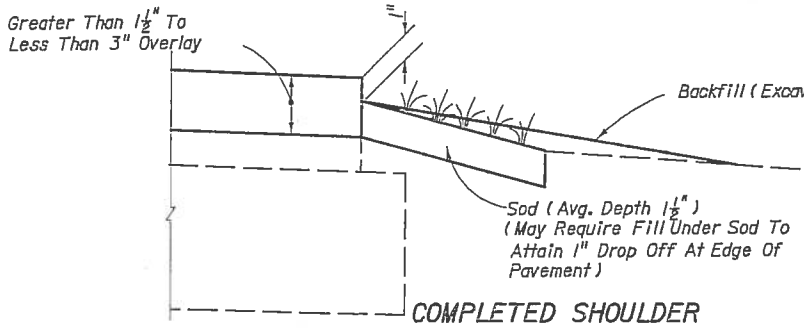


TRENCH OPENING



PLAN VIEW

PATTERN DETAIL



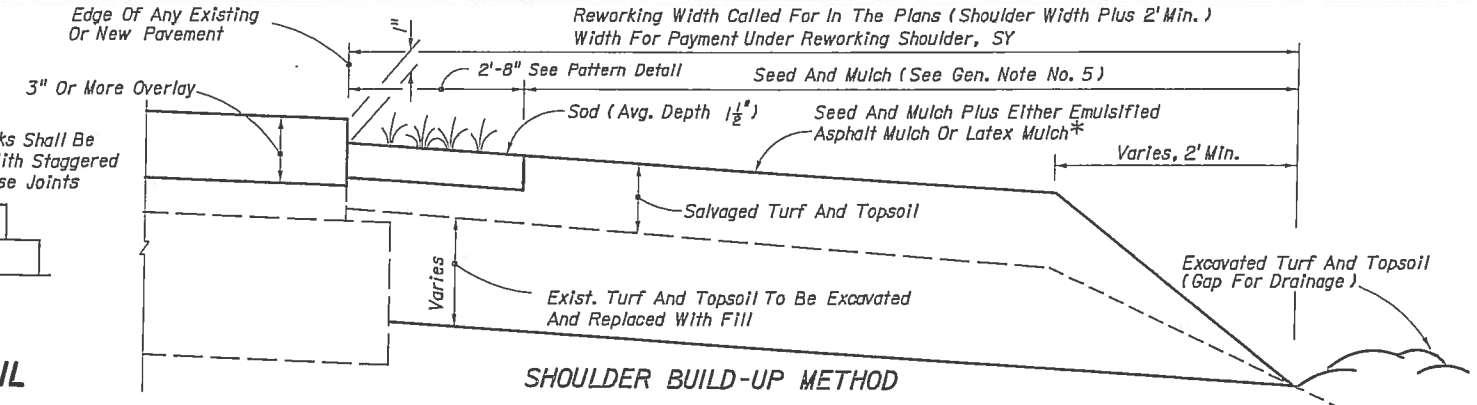
COMPLETED SHOULDER

TYPE R-1

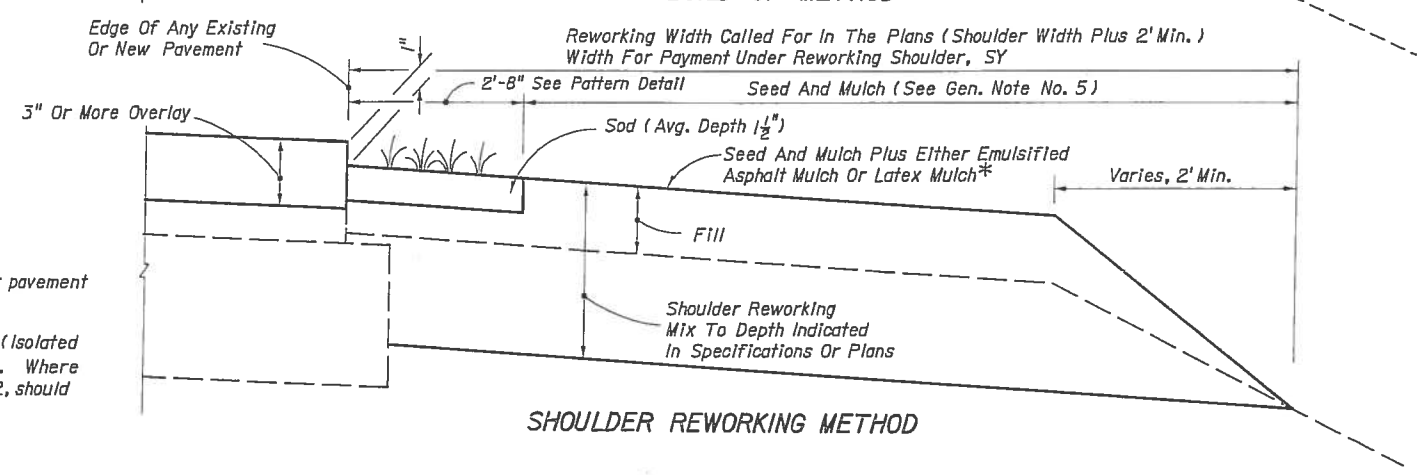
CRITERIA FOR USING TREATMENT TYPE R-1

Project___

- is resurfacing, widening and resurfacing or construction of shoulder pavement
- is rural or is urban without curb and gutter
- has good existing soil and turf with no significant shoulder erosion (Isolated areas of significant erosion will require additional special treatment. Where poor soil and/or turf conditions exist shoulder reworking, Type R-2, should be applied.)
- resurfacing build-up is greater than 1½" to less than 3"



SHOULDER BUILD-UP METHOD



SHOULDER REWORKING METHOD

*Emulsified Asphalt Mulch Or Latex Mulch May Be Deleted For Low Volume Roadways (ADT Less Than 1600) Or Where Shoulder Pavement Is Constructed.

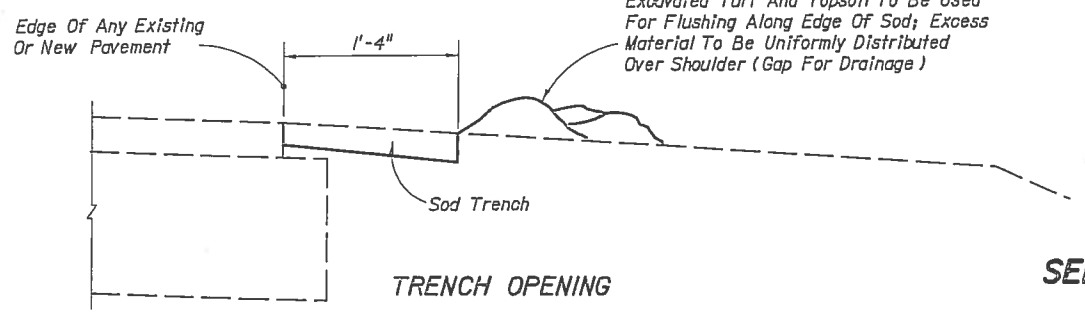
CRITERIA FOR USING TREATMENT TYPE R-2

Project___

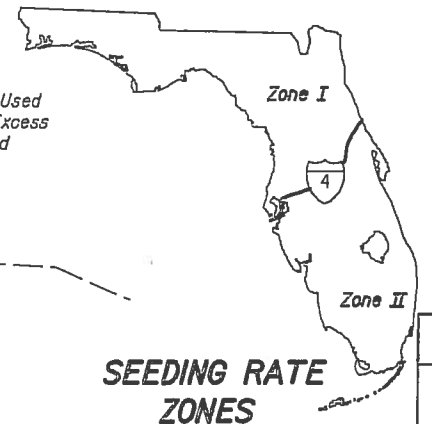
- is resurfacing or construction of shoulder pavement
- is rural or is urban without curb and gutter
- has good existing soil and turf
- resurfacing build-up is 3" or more

A SIMILAR TREATMENT MAY BE USED FOR PROJECTS THAT REQUIRE SHOULDER WIDENING. DETAILS ARE TO BE SHOWN IN THE PLANS.

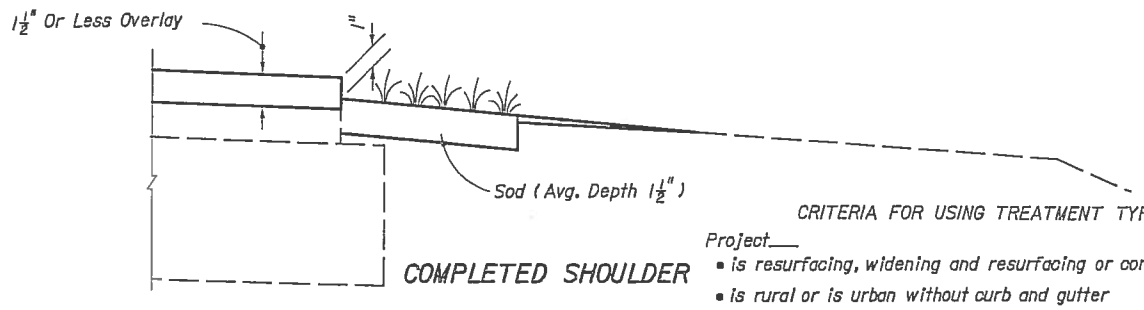
TYPE R-2



TRENCH OPENING



SEEDING RATE ZONES



COMPLETED SHOULDER

CRITERIA FOR USING TREATMENT TYPE R-3

Project___

- is resurfacing, widening and resurfacing or construction of shldr. pavt.
- is rural or is urban without curb and gutter
- has good existing soil and turf with no significant shoulder erosion (Isolated areas of significant erosion will require additional special treatment. Where poor soil and/or turf conditions exist shoulder reworking, Type R-2, should be applied.)
- resurfacing build-up is 1½" or less

TYPE R-3

SEEDING RATES (Lbs/Ac)

TYPE OF SEED	ZONE I				ZONE II			
	COASTAL		INLAND		COASTAL		INLAND	
	Mar. to Nov.	Nov. to Mar.	Mar. to Oct.	Oct. to Mar.	Feb. to Dec.	Dec. to Feb.	Feb. to Dec.	Dec. to Feb.
PERMANENT GRASSES								
Unhulled Bermuda	20	20	20	20	20	20	20	20
Bahia Argentina Or Pensacola Bahia			80	80			80	80
QUICK GROWING GRASS								
Annual Rye Grass		20		20		20		20
TOTAL POUNDS PER ACRE	20	40	100	120	20	40	100	120

Note: The seeding rates shown in this table apply only when seed is spread by an approved mechanical spreader meeting the requirements of Section 570 and 577 of the Standard Specifications.

Wildflowers destroyed by shoulder reworking are to be reestablished under the seeding rates prescribed for permanent wildflower #2 Group shown by table on Index No. 104.

GENERAL NOTES

1. Special attention is to be directed to the construction of the required 1" drop-off at edge of pavement.
2. Fertilize entire unpaved shoulder and front slope to toe of slope or bottom of ditch.
3. Topsoil obtained from borrow pits or other sources may be used in lieu of excavated turf and topsoil when economically feasible. No additional payment will be made for substituting topsoil for excavated turf or topsoil.
4. Payment for excavation of turf and topsoil and for backfill of this material under Types R-1 and R-3, is to be included in the contract unit price for Sodding, SY.
5. Payment for reworking shoulders, shall include the cost for those seeding and mulching operations within the limits for reworking shoulders. Materials (Seed, Mulch, Fertilizer and Water) and Sodding shall be paid for as separate items. Reworking shoulders shall be paid for under the contract unit price for Reworking Shoulders, SY.

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

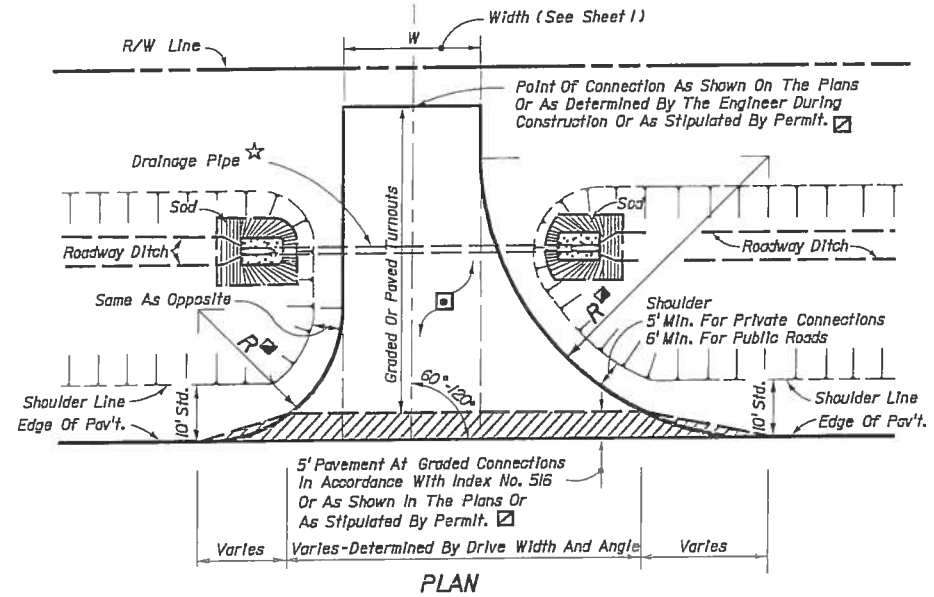
SHOULDER SODDING AND REWORKING ON EXISTING FACILITIES

	Names	Dates
Designed By	EGR	09/07/84
Drawn By	MSD	09/07/84
Checked By	EGR	09/07/84

Approved By _____ State Drainage Engineer

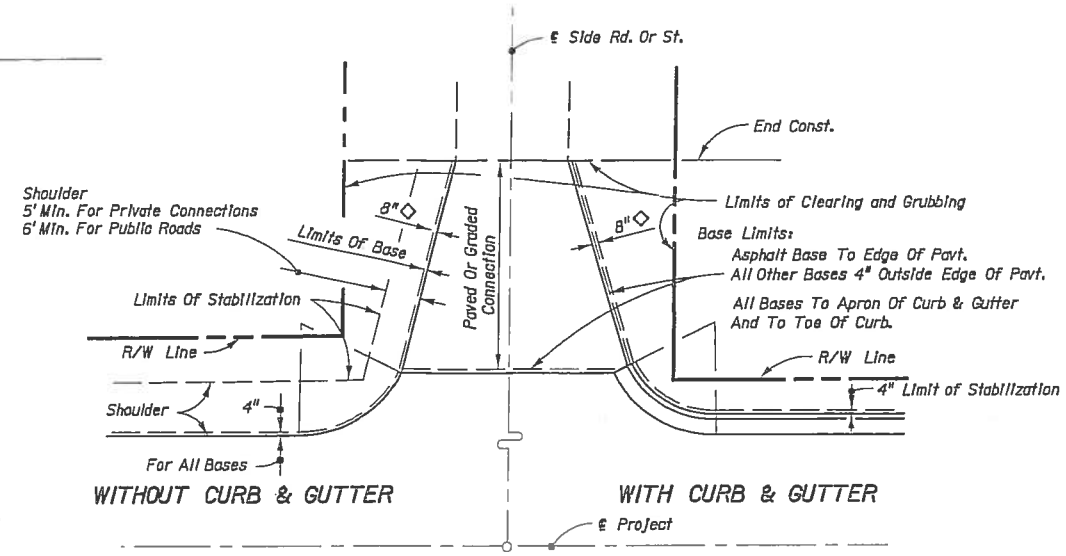
Revision	Sheet No.	Index No.
00	1 of 1	105

Typical Half Section For Low Volume/Residential Connections



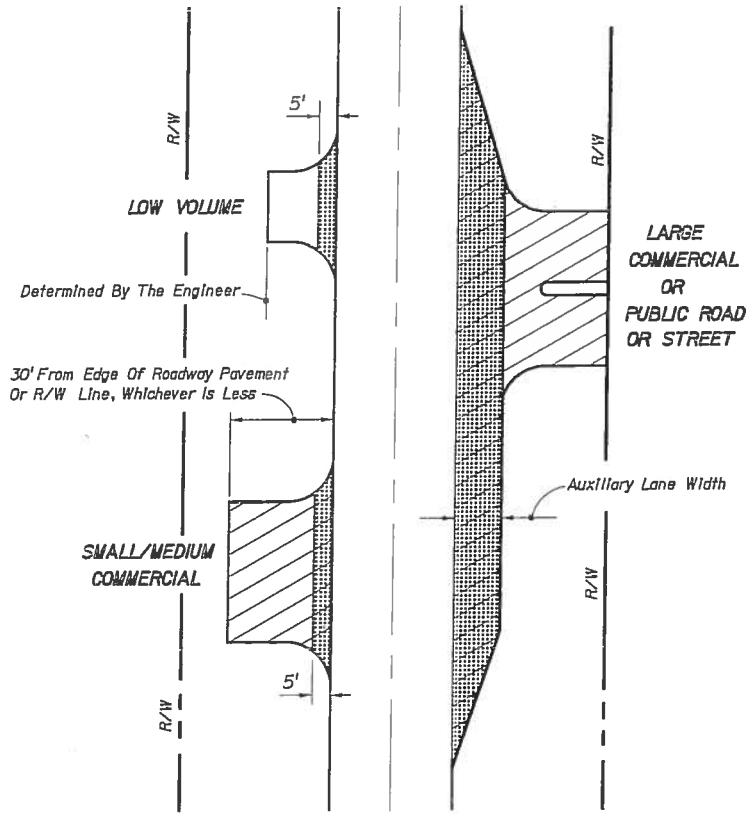
PLAN

Typical Half Section For Higher Volume Connections



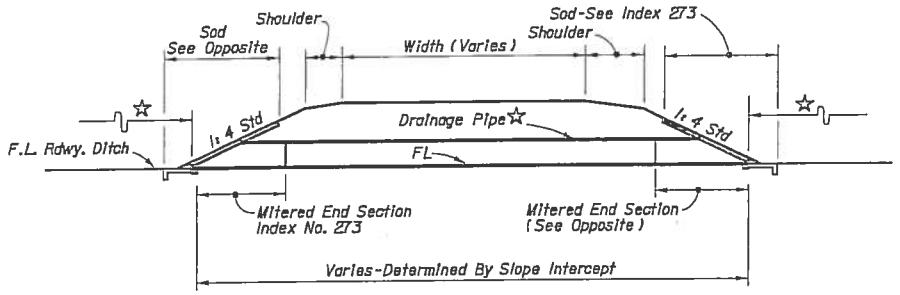
◇ 8" Or Match Exist. Stabilizing (8" Min.)

LIMITS OF CLEARING & GRUBBING, STABILIZING AND BASE AT INTERSECTIONS

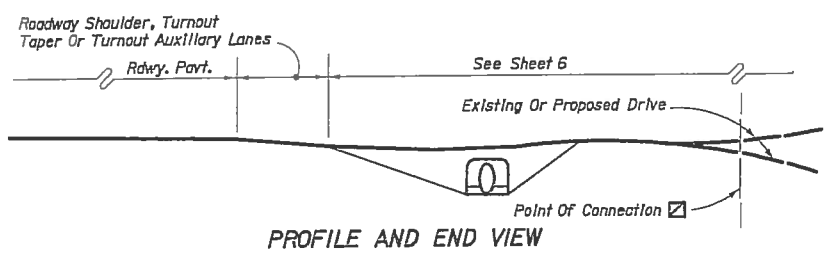


LEGEND

- Graded Or Paved
- Required Paving
- Limits Of Department Maintenance



LONGITUDINAL SECTION



PROFILE AND END VIEW

☆ Drainage pipe size and length shall be that shown on the plans, or as stipulated by permit, or, as determined by the Engineer during construction. The size shall be at least that established by the FDOT District, but not less than 15" diameter or equivalent. For minimum cover over drainage pipe see Index No. 205. Pipe arch or elliptical pipe may be required to obtain necessary cover. At minimal cover applications a modified pavement apron is permitted. See 'PERMISSIBLE PAVEMENT MODIFICATION' Index No. 273. For spacing between adjacent pipe end treatments see Index No. 273.

▣ Stable material may be required for graded turnouts to private property as directed by the Engineer in accordance with Section 102-6 of the Standard Specifications.

☒ The 5' pavement at graded connections is not required where there is paved shoulder 4' or more in width. The 5' pavement requirement may be waived for connections serving one or two homes or field entrances with less than 20 trips per day, or 5 trips per hour as approved by permit or by the Engineer, or when not itemized in the plans.

Paved turnouts are to be constructed for all paved connecting facilities. The connecting point will be determined by the Engineer.

Paved turnouts are to be constructed for all business, commercial, industrial or high volume residential graded connecting facilities. The connecting point shall be 30' from edge of roadway pavement or at R/W line, whichever is less.

Paved turnouts are to be constructed for all connecting facilities over 4000 vehicles per day. The connecting point shall be at the R/W line.

🏞 See "Summary Of Geometric Requirements For Turnouts" chart for return radii lengths and supplemental information.

RURAL TURNOUT CONSTRUCTION

MATERIAL TYPES AND THICKNESSES IN DRIVING AREAS FOR RURAL AND URBAN CONNECTIONS

Course	Materials ②	Thickness (In.) ①	
		Connections ③	Roadway ④
Structural	Asphaltic Concrete	1"	1½"
Bases	Optional Base (See Index No. 514)	O.B.G. 1	O.B.G. 3

① Minimum thickness.
② All materials shall be approved by the Department prior to being placed.
③ Connection structure other than traffic lanes. See Notes 1 and 2 below.
④ Travel way flares (bypass lanes), auxiliary lanes serving more than a single connection, and all median crossovers including their auxiliary lanes and/or transition tapers. See Notes 1 and 2 below.

NOTES

1. The pavement should be structurally adequate to meet the expected traffic loads and should not be less than that shown above, except as approved by the Department for graded connections. Other Department approved pavement equivalences may be used at the discretion of the Engineer. For additional information see Index No. 514.
2. Auxiliary lanes and their transition tapers shall be the same structure as the abutting roadway pavement or any of the roadway structures tabulated above, whichever is thicker.
3. If an asphalt base course is used for a turnout, its thickness may be increased to match the edge of roadway pavement in lieu of a separate structural course. 6" of Portland cement concrete will be acceptable in lieu of the asphalt base and structural courses. See Notes 4 and 5 below.
4. A structural course is required for flexible pavements when they are used for auxiliary lanes serving more than a single connection.
5. Connections paved with Portland cement concrete shall be Class I concrete at least 6" thick. The Department may require greater thickness when called for in the plans or stipulated by permit. Materials and construction are to conform with FDOT Standard Specifications Sections 346, 350 and 522.
6. The Department may require other pavement criteria where local conditions warrant.

PAVEMENT STRUCTURE FOR TURNOUTS AND AUXILIARY LANES TABLE 515-1

NOTES

1. Auxiliary lane pavements and crossover pavements shall be maintained by the Department.
2. Department maintenance of turnout pavement shall extend out to 5' from edge of the travel way or limits of paved shoulders, and, extend to include auxiliary lanes. The remainder of any turnout paved area on the right of way shall be maintained by the owner or his authorized agent. As a function of routinely reworking shoulders, the Department may grade and shape existing material on non-paved areas beyond the maintained pavement.
3. Control and maintenance of drainage facilities within the right of way shall be solely the responsibility of the Department, unless specified differently by Department permit.
4. The maintenance and operation of highway lighting, traffic signals, associated equipment, and other necessary devices shall be the responsibility of a public agency.
5. All pavement markings on the State highways, including acceleration and deceleration lane markings, and signing installed for the operation of the State highway shall be maintained by the Department.
6. All signing and marking installed for the operation of the connection (such as stop bars and stop signs for the connection) shall be the responsibility of the permittee.

LIMITS OF CONSTRUCTION AND MAINTENANCE FOR RURAL CONNECTIONS

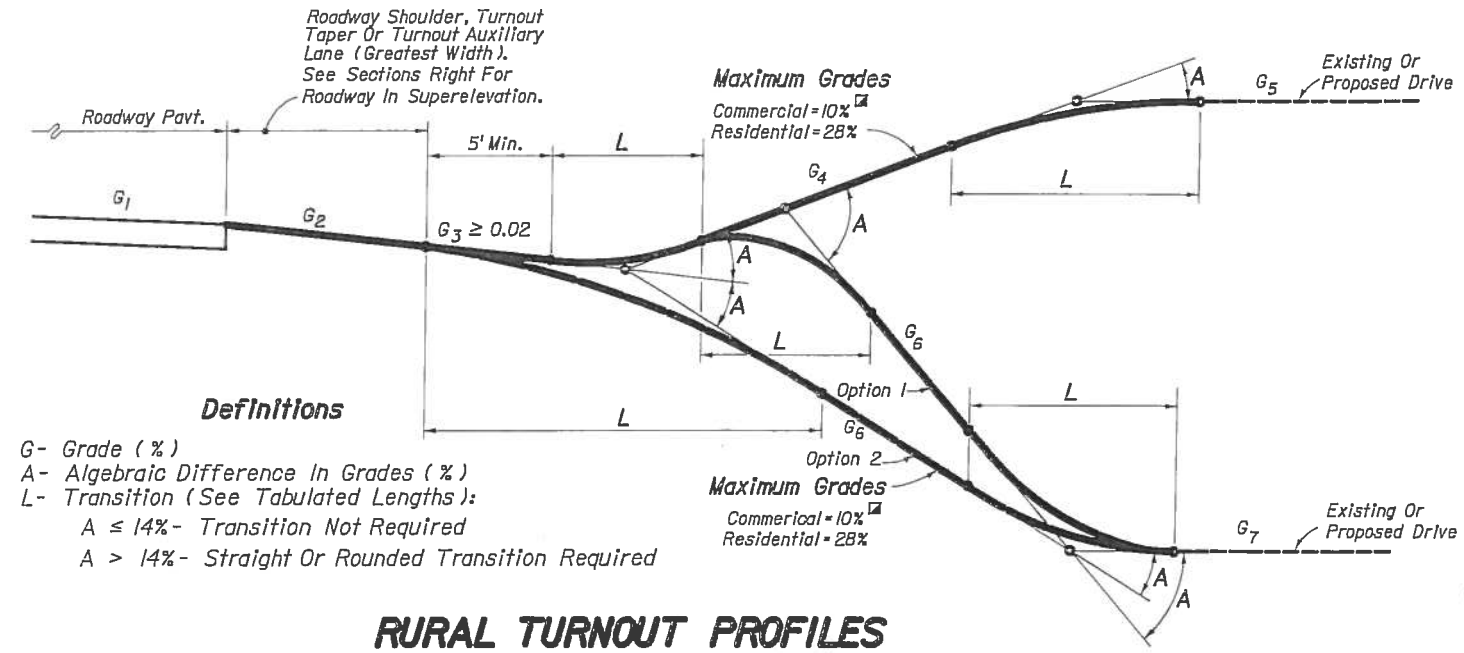
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

TURNOUTS

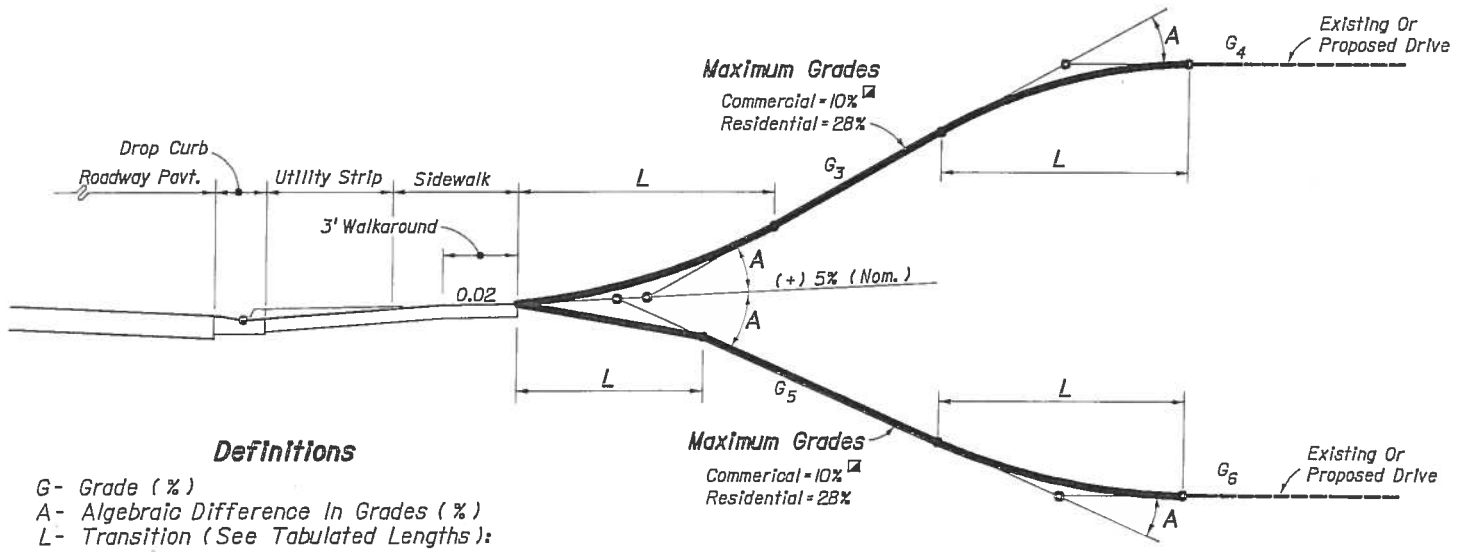
	Names	Dates
Designed By	COMM/JV	90/91
Drawn By	HSD	3/91
Checked By	JVG	03/91

Approved By _____ Roadway Design Engineer

Revision	Sheet No.	Index No.
04	5 of 6	515



RURAL TURNOUT PROFILES



URBAN TURNOUT PROFILES

☑ When restoring or reconstructing existing commercial turnout connections on new construction and reconstruction projects, the maximum 10% commercial grade may be exceeded provided this does not create any adverse roadway operational or safety impacts. This shall be approved by the District Design Engineer and be supported by documented site specific findings.

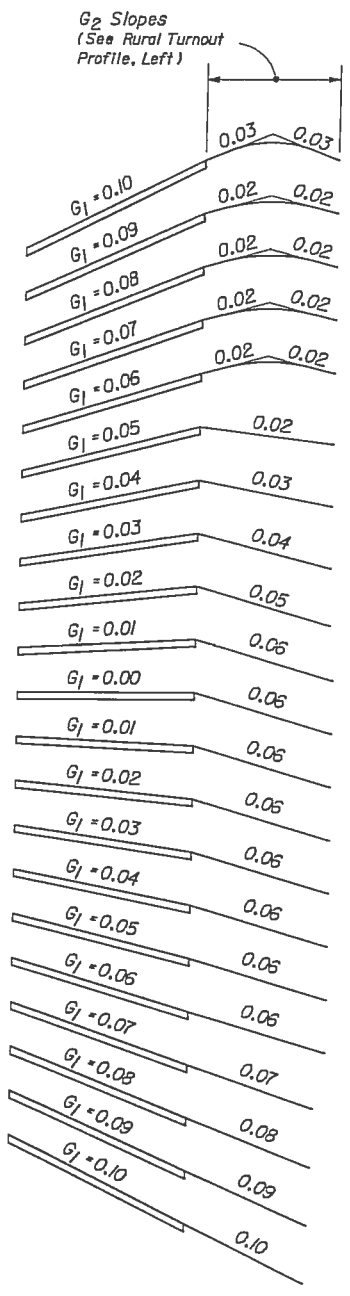
LENGTHS (L) (FT.)

A	CRESTS				SAGS			
	STRAIGHT		ROUNDED		STRAIGHT		ROUNDED	
	Desirable	Minimum	Desirable	Minimum	Desirable	Minimum	Desirable	Minimum
6-13%	3	0	5	0	3	0	5	0
14%	3	0	10	0	3	0	10	0
15%	3	2.5	10	3	5	3	10	5
16%	5	3	10	4	6	4	10	6
17%	6	3.5	10	5	8	5	10	7
18%	6	4	10	6	9	6	10	8
19%	7	4.5	10	7	11	7	12	9
20%	8	5	11	8	12	8	13	10
21%	9	5.5	12	9	13	8.5	14	11
22%	10	6	13	10	14	9	16	12
23%	10	6.5	14	10.5	14	9.5	16	12.5
24%	11	7	15	11	15	10	17	13
25%	12	7.5	15	11.5	16	10.5	18	13.5
26%	12	8	16	12	17	11	18	14
27%	13	8.5	17	12.5	17	11.5	19	14.5
28%	14	9	17	13	18	12	20	15
29%	NA	NA	22	14	NA	NA	21	17
30-31%	NA	NA	23	15	NA	NA	22	18
32-33%	NA	NA	24	16	NA	NA	23	20
34-36%	NA	NA	26	17	NA	NA	25	21
37-38%	NA	NA	27	18	NA	NA	26	22
39-41%	NA	NA	29	19	NA	NA	28	24
42-43%	NA	NA	30	20	NA	NA	29	25
44-46%	NA	NA	32	21	NA	NA	31	26
47-48%	NA	NA	33	22	NA	NA	32	27
49-51%	NA	NA	34	23	NA	NA	34	28
52-54%	NA	NA	36	24	NA	NA	35	30
55-56%	NA	NA	37	25	NA	NA	36	31

Rounded: Either circular, parabolic or spline curvature. The plans or the Engineer may specify a particular type of curvature.

Desirable: Desirable minimum lengths.
Minimum: Absolute minimum lengths.
} Greater lengths than minimum and desirable are recommended where practical for flatter and smoother profile.

RECOMMENDED TURNOUT PROFILE TRANSITION LENGTHS (L) (FT)



ROADWAY PAVEMENT SLOPES AND SLOPES OF ABUTTING RURAL TURNOUT SURFACES (G_2)

SUPERELEVATION SECTIONS

STORMWATER RUNOFF AND PROFILE OPTION NOTES

1. Turnouts shall neither cause water to flow on or across the roadway pavement, nor cause water ponding or erosion within the State right of way. On all rural turnouts the transition (L) nearest the roadway shall be sloped or crowned to direct stormwater runoff to the roadside ditch. Inlets, flumes or other appropriate runoff control devices shall be constructed when runoff volumes are sufficient to cause erosion of the shoulder. Similar runoff control devices shall be constructed as necessary to properly direct and control the stormwater runoff on urban turnouts.

2. The Option 1 profile is intended for locations where roadway, turnout taper and auxiliary lane stormwater runoff volumes are relatively large. The Option 2 profile is intended for locations where runoff volumes are relatively small and/or where there is no roadside ditch.

TURNOUT PROFILES

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

TURNOUTS

	Names	Dates	Approved By
Designed By			Roadway Design Engineer
Drawn By	HSD	08/82	Revision: 02
Checked By	JVG	08/82	Sheet No.: 6 of 6
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CONTENTS

PREFACE

All projects and works on highways, roads and streets shall have a traffic control plan. All work shall be executed under the established plan and Department approved procedures. This index contains information specific to the Federal and State guidelines and standards for the preparation of traffic control plans and for the execution of traffic control in work zones, for construction and maintenance operations and utility work on highways, roads and streets.

Index No. 600 provides Department policy and standards. Changes are only to be made thru Department approved procedures. Index Nos. 601 thru 670 provide typical applications for various situations. Modification can be made to these Indexes as long as the changes comply with the MUTCD and Department Design Standards.

The sign spacings shown on the Indexes are typical (recommended) distances. These distances may be increased or decreased based on field conditions, in order to avoid conflicts or to improve site specific traffic controls.

MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES

The Florida Department of Transportation has adopted the "Manual On Uniform Traffic Control Devices For Streets And Highways" (MUTCD) and subsequent revisions and addendums, as published by the U.S. Department of Transportation, Federal Highway Administration, for mandatory use on the State Maintained Highway System whenever there exists the need for construction, maintenance operations or utility work.

ABBREVIATIONS

Abbreviations assigned to the 600 series Design Standards and applicable to traffic control plans, unless otherwise identified in the plans, are as follows:

CFR	Code of Federal Regulations
DTOE	District Traffic Operations Engineer
FDOT	Florida Department Of Transportation
HAR	Highway Advisory Radio
L	Taper Length, Buffer Length Or Taper Length Plus Buffer Space
LEO	Law Enforcement Officer
MAS	Motorist Awareness System
MOT	Maintenance Of Traffic
MOTC	Maintenance Of Traffic Committee
MUTCD	Manual On Uniform Traffic Control Devices For Streets And Highways
NCHRP	National Cooperative Highway Research Program
PCMS	Portable Changeable (Variable) Message Sign
PRS	Portable Regulatory Sign
R	Radius
RPM	Raised Retroreflective Pavement Marker
RSDU	Radar Speed Display Unit
S	Posted Speed Of Off-Peak 85 Percentile Speed (MPH)
TCP	Traffic Control Plan(s)
TCZ	Traffic Control Zones
TMA	Truck Mounted Attenuator
VECP	Value Engineering Change Proposal
W	Width Of Taper Transition In Feet i.e., Lateral Offset

SYMBOLS

The symbols shown are found in the Traffic Control Zone Cell Library (TCZ.cel) on the CADD system.
Symbols assigned to the 600 series Design Standards and applicable to traffic control plans, unless otherwise identified in the plans, are as follows:

- Work Area, Hazard Or Work Phase (Any pattern within a boundary)
- Sign With 18" x 18" (Min.) Orange Flag And Type B Light
- Type I Or Type II Barricade Or Vertical Panel Or Drum
- Type I Or Type II Barricade Or Vertical Panel Or Drum (With Flashing Light At Night Only)
- Type I Or Type II Barricade Or Vertical Panel Or Drum (With Steady Burning Light At Night Only).
- Type I Or Type II Barricade Or Vertical Panel Or Cone Or Tubular Marker Or Drum
- Cone Or Tubular Marker
- Type I, Type II Or Type III Barricade Or Vertical Panel Or Drum
- Type I, Type II Or Type III Barricade Or Vertical Panel Or Drum (With Flashing Light)
- Type I, Type II Or Type III Barricade Or Vertical Panel Or Drum (With Steady Burning Light)
- Type III Barricade
- Type III Barricade (With Flashing Light)
- Type III Barricade (With Steady Burning Light)
- Work Zone Sign
- Flagger
- Traffic Signal
- Advance Warning Arrow Panel
- Portable Signal
- Crash Cushion
- Stop Bar
- W — Work Vehicle With Flashing Beacon
- X — Shadow (S) Or Advance Warning (AW) Vehicle With Advance Warning Arrow Panel And Warning Sign
- A — Truck Mounted Attenuator (TMA)
- Orange Flag For TCZ Signs
- Type B Light For TCZ Signs
- Law Enforcement Officer
- Portable Regulatory Sign
- Radar Speed Display Unit
- Portable Changeable (Variable) Message Sign

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL THROUGH WORK ZONES

GENERAL INFORMATION FOR TRAFFIC CONTROL THROUGH WORK ZONES

	Names	Dates
Designed By		02
Drawn By		
Checked By		

Approved By _____ Roadway Design Engineer

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DEFINITIONS

Regulatory Speed (In Work Zones)

The maximum permitted travel speed posted for the work zone as indicated by the regulatory speed limit signs. The work zone speed must be shown or noted in the plans. This speed should be used as the minimum design speed to determine runout lengths, departure rates, flare rates, lengths of need, clear zone widths, taper lengths, crash cushion requirements, marker spacings, superelevation and other similar features.

Advisory Speed

The maximum recommended travel speed through a curve or a hazardous area.

Travel Way

The portion of the roadway for the movement of vehicles. For traffic control through work zones, travel way may include the temporary use of shoulders and any other permanent or temporary surface intended for use as a lane for the movement of vehicular traffic.

Detour, Lane Shift, and Diversion

A detour is the redirection of traffic onto another roadway to bypass the temporary traffic control zone. A lane shift is the redirection of traffic onto a different section of the permanent pavement. A diversion is the redirection of traffic onto a temporary roadway, usually adjacent to the permanent roadway and within the limits of the right-of-way.

Above Ground Hazard

An above ground hazard is any object, material or equipment other than traffic control devices that encroaches upon the travel way or that is located within the clear zone which does not meet the Departments safety criteria, i.e., anything that is greater than 4" in height and is firm and unyielding or doesn't meet breakaway requirements.

TEMPORARY TRAFFIC CONTROL DEVICES

All temporary traffic control devices shall be removed as soon as practical when they are no longer needed. When work is suspended for short periods of time, temporary traffic control devices that are no longer appropriate shall be removed or covered. Arrow Panels, Portable Changeable Message Signs, Radar Speed Display Trailers, Portable Regulatory Signs, and any other NCHRP 350 Category 4 devices shall be moved outside the travel way and clear zone or be shielded by a barrier or crash cushion when not in use.

PEDESTRIAN AND BICYCLIST

When an existing pedestrian way or bicycle way is located within a traffic control work zone, accommodation must be maintained and provision for the disabled must be provided.

Only approved temporary traffic control devices may be used to delineate a temporary traffic control zone pedestrian walkway.

Advanced notification of sidewalk closures and detours marked shall be provided by appropriate signs.

RAILROADS

Railroad crossings affected by a construction project should be evaluated for traffic controls to reduce queuing on the tracks. The evaluation should include as a minimum: traffic volumes, distance from the tracks to the intersections, lane closure or taper locations, signal timing, etc.

OVERHEAD WORK

No work shall be allowed over a traffic lane using a bucket truck, unless a lane closure has been set up in accordance with the appropriate Index.

OVERWEIGHT/OVERSIZE VEHICLES

Restrictions to Lane Widths, Heights or Load Capacity can greatly impact the movement of over dimensioned loads. The Contractor shall notify the Engineer who in turn shall notify the State Permits Office, phone no. (850) 410-5777, at least seven calendar days in advance of implementing a maintenance of traffic plan which will impact the flow of overweight/oversized vehicles. Information provided shall include location, type of restriction (height, width or weight) and restriction time frames. When the roadway is restored to normal service the State Permits Office shall be notified immediately.

LANE WIDTHS

Lane widths of through roadways should be maintained through work zone travel ways wherever practical. The minimum widths for work zone travel lanes shall be as follows: 11' for Interstate with at least one 12' lane provided in each direction, unless formally excepted by the Federal Highway Administration; 11' for freeways; and 10' for all other facilities.

LENGTH OF LANE CLOSURES

Lane closures shall not exceed 2 miles in total length in any given direction on the Interstate or on state highways with a posted speed of 55 MPH or greater.

SIGHT DISTANCE TO DELINEATION DEVICES

Transition tapers should be obvious to drivers. If restricted sight distance is a problem (e.g., a sharp vertical or horizontal curve), the taper should begin well in advance of the view obstruction. The beginning of tapers should not be hidden behind curves.

ABOVE GROUND HAZARD

Above ground hazards (see definitions) are to be considered work areas during working hours and treated with appropriate work zone traffic control procedures. During non-working hours, all objects, materials and equipment that constitute an above ground hazard must be stored/placed outside the travel way and clear zone or be shielded by a barrier or crash cushion.

For above ground hazards within a work zone the clear zone required should be based on the regulatory speed posted during construction.

CLEAR ZONE WIDTHS FOR WORK ZONES

The term 'clear zone' describes the unobstructed relatively flat area, impacted by construction, extending outward from the edge of the travel lane. The table below gives clear zone widths in work zones for medians and roadside conditions other than for roadside canals; where roadside canals are present, clear zone widths are to conform with the distances to canals as described in Volume I Chapter 4, Sec 4.2 and Exhibit 4-A and 4-B of the Plans Preparation Manual.

CLEAR ZONE WIDTHS FOR WORK ZONES	
WORK ZONE SPEED (MPH)	WIDTHS (feet)
60-70	30
55	24
45-50	18
30-40	14
ALL SPEEDS CURB & GUTTER	4' BEHIND FACE OF CURB

SUPERELEVATION

Horizontal curves constructed in conjunction with work zone traffic control should have the required superelevation applied to the design radii. Under conditions where normal cross slope controls curvature, the minimum radii that can be applied are listed in the table below.

MINIMUM RADII FOR NORMAL CROSS SLOPES	
DESIGN SPEED	MINIMUM RADIUS R
MPH	feet
65	3130
60	2400
55	1840
50	1390
45	1080
40	820
35	610
30	430
Superelevate When Smaller Radii Used	

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL THROUGH WORK ZONES

GENERAL INFORMATION FOR TRAFFIC CONTROL THROUGH WORK ZONES

	Names	Dates
Designed By		12/97
Drawn By		12/97
Checked By		12/97

Approved By: James A. Mills
Roadway Design Engineer

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REGULATORY SPEEDS IN WORK ZONES

Traffic Control Plans (TCPs) for all projects must include specific regulatory speeds for each phase of work. This can either be the posted speed or a reduced speed. The speed shall be noted in the TCPs; this includes indicating the existing speed if no reduction is to be made. Regulatory speeds are to be uniformly established through each phase.

In general, the regulatory speed should be established to route vehicles safely through the work zone as close to normal highway speed as possible. The regulatory speed should not be reduced more than 10 mph below the posted speed and never below the minimum statutory speed for the class of facility. When a speed reduction greater than 10 mph is imposed, the reduction is to be done in 10 mph per 500' increments.

Temporary regulatory speed signs shall be removed as soon as the conditions requiring the reduced speed no longer exist. Once the work zone regulatory speeds are removed, the regulatory speed existing prior to construction will automatically go back into effect unless new speed limit signing is provided for in the plans.

On projects with interspaced work activities, speed reductions should be located in proximity to those activities which merit a reduced speed, and not "blanketed" for the entire project. At the departure of such activities, the normal highway speed should be posted to give the motorist notice that normal speed can be resumed.

If the existing regulatory speed is to be used, consideration should be given to supplementing the existing signs when the construction work zone is between existing regulatory speed signs. For projects where the reduced speed conditions exist for greater than 1 mile in rural areas (non-interstate) and on rural or urban interstate, additional regulatory speed signs are to be placed at no more than 1 mile intervals. Engineering judgement should be used in placement of the additional signs. Locating these signs beyond ramp entrances and beyond major intersections are examples of proper placement. For urban situations (non-interstate), additional speed signs are to be placed at a maximum of 1000' apart.

When field conditions warrant speed reductions different from those shown in the TCP the contractor may submit to the project engineer for approval by the Department, a signed and sealed study to justify the need for further reducing the posted speed, or, the engineer may request the District Traffic Operations Engineer (DTOE) to investigate the need. It will not be necessary for the DTOE to issue regulations for regulatory speeds in work zones due to the revised provisions of F.S. 316.0745(2) (b). Advisory Speed plates will be used at the option of the field engineer for temporary use while processing a request to change the regulatory speed specified in the plans when deemed necessary. Advisory speed plates cannot be used alone but must be placed below the construction warning sign for which the advisory speed is required.

For additional information refer to the FDOT Roadway Plans Preparation Manual, Volume I, Chapter 10.

FLAGGER CONTROL

Where flaggers are used, a FLAGGER symbol or legend sign must replace the WORKERS symbol or legend sign.

The flagger must be clearly visible to approaching traffic for a distance sufficient to permit proper response by the motorist to the flagging instructions, and to permit traffic to reduce speed or to stop as required before entering the work site. Flaggers shall be positioned to maintain maximum color contrast between the Flagger's reflective garments and equipment and the work area background.

HIGH-VISIBILITY CLOTHING

For daytime work, the flagger's vest, shirt, or jacket shall be orange, or a fluorescent version of this color. For nighttime work, similar outside garments shall be retroreflective. The retroreflective material shall be either orange, yellow, white, silver, yellow-green, or a fluorescent version of these colors, and be visible at a minimum distance of 1,000 ft. The retroreflective clothing shall be designed to clearly identify the wearer as a person.

HAND-SIGNALING DEVICES

STOP/SLOW paddles are the primary hand-signaling device. The STOP/SLOW paddle shall have an octagonal shape on a rigid handle. STOP/SLOW paddles shall be at least 24 inches wide with letters at least 6 inches high and should be fabricated from light semi-rigid material. The background of the STOP face shall be red with white letters and border. The background of the SLOW face shall be orange with black letters and border. When used at night-time, the STOP/SLOW paddle shall be retroreflectorized.

Flag use is limited to immediate emergencies, intersections, and when working on centerline or shared left turn lanes where two (2) flaggers are required and there is opposing traffic in the adjacent lanes. Flags, when used, shall be a minimum of 24 inches square, made of a good grade of red material, and securely fastened to a staff that is approximately 36 inches in length. When used at nighttime, flags shall be retroreflectorized red.

Flashlight, lantern or other lighted signal that will display a red warning light shall be used at night.

FLAGGER STATIONS

Flagger stations shall be located far enough in advance of the work space so that approaching road users will have sufficient distance to stop before entering the work space. When used at nighttime, the flagger station shall be illuminated.

SURVEY WORK ZONES

The SURVEY CREW AHEAD symbol or legend sign shall be the principal Advance Warning Sign used for Traffic Control Through Survey Work Zones and may replace the ROAD WORK AHEAD sign when lane closures occur, at the discretion of the Party Chief. Type B Light or dual orange flags shall be used at all times to enhance the SURVEY CREW AHEAD sign, even with mesh signs.
When Traffic Control Through Work Zones is being used for survey purposes only, the END ROAD WORK sign as called for on certain 600 Series Indexes should be omitted.

SURVEY BETWEEN ACTIVE TRAFFIC LANES OR SHARED LEFT TURN LANES

The following provisions apply to Main Roadway Traffic Control Work Zones. These provisions must be adjusted by the Party Chief to fit roadway and traffic conditions when the Survey Work Zone includes Intersections.

(A) A STAY IN YOUR LANE (MOT-1) sign shall be added to the Advance Warning Sign sequence as the second most immediate sign from the work area.

(B) Elevation Surveys-Cones may be used at the discretion of the Party Chief to protect prism holder and flagger(s). Cones, if used, may be placed at up to 50' intervals along the break line throughout the work zone.

(C) Horizontal Control-With traffic flow in the same direction, cones shall be used to protect the backsight tripod and/or instrument. Cones shall be placed at the equipment, and up to 50' intervals for at least 200' towards the flow of traffic.

(D) Horizontal Control-With traffic flow in opposite directions, cones shall be used to protect the backsight tripod and/or instrument. Cones shall be placed at the equipment, and up to 50' intervals for at least 200' in both directions towards the flow of traffic.

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL THROUGH WORK ZONES

GENERAL INFORMATION FOR TRAFFIC CONTROL THROUGH WORK ZONES

	Names	Dates
Designed By		12/97
Drawn By		12/97
Checked By		12/97

Approved By _____
Roadway Design Engineer

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SIGN PLACEMENT

Post-mounted signs installed at the side of the road shall be mounted at a height at least 7 feet measured from the bottom of the sign to a horizontal line extended from the near edge of the pavement. Signs mounted on barricades, or other portable supports shall be no less than 1 foot above the travel way.

ADJOINING AND/OR OVERLAPPING WORK ZONE SIGNING

Adjoining work zones may not have sufficient spacing for standard placement of signs and other traffic control devices in their advance warning areas or in some cases other areas within their traffic control zones. Where such restraints or conflicts occur or are likely to occur, one of the following methods will be employed to avoid conflicts and prevent conditions that could lead to misunderstanding on the part of the traveling public as to the intended travel way by the traffic control procedure applied:

(a) For scheduled projects the engineer in responsible charge of project design will resolve anticipated work zone conflicts during the development of the project traffic control plan. This may entail revision of plans on preceding projects and coordination of plans on concurrent projects.

(b) Unanticipated conflicts arising between adjoining in progress highway construction projects will be resolved by the Resident Engineer for projects under his residency, and, by the District Construction Engineer for in progress projects under adjoining residencies.

(c) The District Maintenance Engineer will resolve anticipated and occuring conflicts within scheduled maintenance operations.

(d) The Unit Maintenance Engineer will resolve conflicts that occur within routine maintenance works; between routine maintenance work, unscheduled work and/or permitted work; and, between unit controlled maintenance works and highway construction projects.

SIGN COVERING AND INTERMITTENT WORK STOPPAGE SIGNING

Existing signs that conflict with temporary work zone signing shall be removed or covered as approved by the Engineer. Traffic control signs that require covers when no work is being performed in a work area shall be fully covered with a durable opaque sheet material.
Plastic film and woven fabrics including burlap will not be permitted.
Covering of only the legend or symbol will not be permitted.
Reflective coverings will not be permitted.
Hinged signs designed to cover when folded will be permitted.
Covers, hinged panels and intermittent work stoppage shields and plaques are incidental to work operation signs and are not to be paid for separately.

SIGN MATERIALS

Mesh signs may be used only for Daylight Operations as noted in the standards. Type B Lights and Orange Flags are not required except for survey work zones.

Vinyl signs may be used for Day or Night Operations not to exceed 12 hours except as noted in the standards. Type B Lights and Orange Flags are not required except for survey work zones.

WORK ZONE SIGN SUPPORTS

All signs shall be post mounted if operation exceeds 12 hours except as noted in the standards.

Signs mounted on temporary supports or barricades, and barricade/sign combination shall be crashworthy in accordance with NCHRP 350 requirements and included on the Qualified Products List (QPL).

All post mounted Work Zone signs shall be installed on either round aluminum or steel channel post as specified in the table below.

SUPPORTS FOR MAINTENANCE OF TRAFFIC SIGNS					
SIGN SIZE	SIGN BRACKET	ROUND ALUMINUM	DEPTH IN GROUND	STEEL CHANNEL	DEPTH IN GROUND
24" x 36"	2-I	NPS 2.0" x $\frac{1}{8}$"	2'-0"	2.5 lb F/M*	3'-0"
48" x 48" DIAMOND	2-I & I-II	NPS 3.5" x $\frac{3}{16}$"	3'-4"	**	3'-0"
60" x 48"	3-I	NPS 3.5" x $\frac{3}{16}$"	3'-4"	**	3'-0"
24" x 30"	2-I	NPS 2.0" x $\frac{1}{8}$"	2'-0"	2.5 lb F/M*	3'-0"
48" x 48"	2-II	NPS 3.0" x $\frac{1}{8}$"	2'-6"	**	3'-0"
60" x 24"	3-I	NPS 3.0" x $\frac{1}{8}$"	2'-6"	3.0 lb F/M*	3'-0"
60" x 36"	3-I	NPS 3.5" x $\frac{3}{16}$"	3'-4"	4.0 lb F/M*	3'-0"

* F/M Indicates Type F or Type M

** Requires two 3 lb/ft steel channel (F/M) at 2'-6" center to center. All sign brackets shall be Type I. The total number of brackets shall be per post as tabulated, except the "Diamond" sign which shall use two Type I brackets per post.

The 4 lb/ft steel channel shall be installed with approved breakaway bases.

Refer to Index No. 11860, Sheet 3, for round aluminum sign bracket details, and Index No. 11865, Sheet 2, for steel channel breakaway bases, and notes.

SIGNING FOR DETOURS, LANE SHIFTS AND DIVERSIONS

Detours should be signed clearly over their entire length so that motorists can easily determine how to return to the original roadway. The WI-4R, MOT-2-04, and MOT-3-04 warning signs should be used for the advanced warning for a lane shift. A diversion should be signed as a lane shift.

EXTENDED DISTANCE ADVANCE WARNING SIGNS

Advance Warning Signs shall be used at extended distance of one-half mile or more when limited sight distance or the nature of the obstruction may require a motorist to bring their vehicle to a stop. Extended distance Advanced Warning Signs may be required on any type roadway, but particularly be considered on multi-lane divided highways where vehicle speed is generally in the higher range (45 MPH or more).

SPEEDING FINES DOUBLED WHEN WORKERS PRESENT SIGN

The SPEEDING FINES DOUBLED WHEN WORKERS PRESENT sign should be installed on all projects. The placement should be 500 ft beyond the ROAD WORK AHEAD sign or midway to the next sign whichever is less.

LENGTH OF ROAD WORK SIGN

The length of road work sign (G20-1) bearing the legend ROAD WORK NEXT____ MILES is required for all projects of more than 2 miles in length. The number of miles entered should be rounded up to the nearest mile. The sign shall be located at begin construction points.

INTERSECTING ROAD SIGNING

Signing for the control of traffic entering and leaving work zones by way of intersecting highways, roads and streets shall be adequate to make drivers aware of work zone conditions. Under no condition will intersecting leg signing be less than a ROAD WORK AHEAD sign, including light and flag, for approaching vehicles.

END ROAD WORK SIGNS

The END ROAD WORK sign (G20-2A) should be erected approximately 500 feet beyond the end of a construction or maintenance project unless other distance called for in the plans. When other Construction or Maintenance Operations occur within 1 mile this sign should be omitted and signing coordinated in accordance with Index No. 600, ADJOINING AND/OR OVERLAPPING WORK ZONE SIGNING.

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL THROUGH WORK ZONES

GENERAL INFORMATION FOR TRAFFIC CONTROL THROUGH WORK ZONES

	Names	Dates
Designed By		12/97
Drawn By		12/97
Checked By		12/97

Approved By James A. Mills
Roadway Design Engineer

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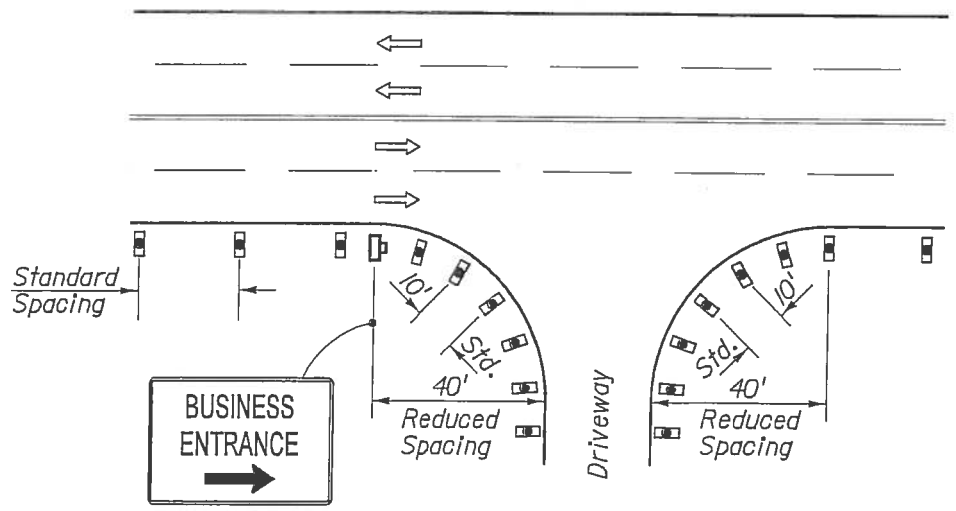
1. Sign height shall be 7' minimum. Sign offset from edge of travel way should be between 6' and 10' and relatively consistent through the project phase.

2. Place one business sign for each driveway entrance affected. When several businesses share a common driveway entrance, place one sign per common driveway entrance.

3. Channelizing devices should be placed at a reduced spacing on each side of the driveway entrance.



PLACEMENT OF BUSINESS ENTRANCE SIGNS AND CHANNELIZING DEVICES AT BUSINESS ENTRANCE

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL THROUGH WORK ZONES

GENERAL INFORMATION FOR TRAFFIC CONTROL THROUGH WORK ZONES

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Designed By		
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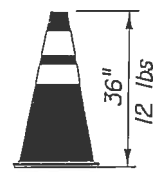

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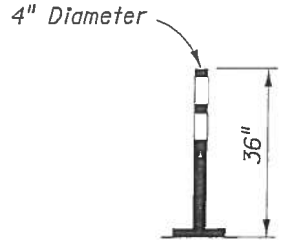
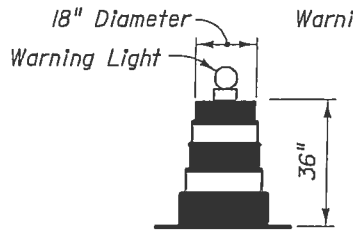


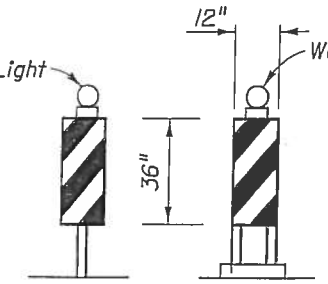
TUBULAR NON-FIXED MARKER TO BE USED DURING DAYLIGHT ONLY

TUBULAR MARKER



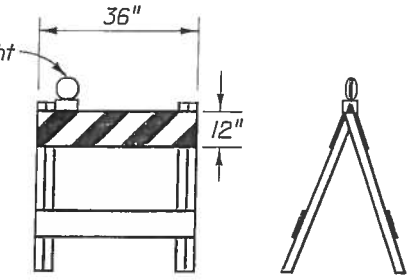
STEEL DRUMS NOT PERMITTED

PLASTIC DRUMS

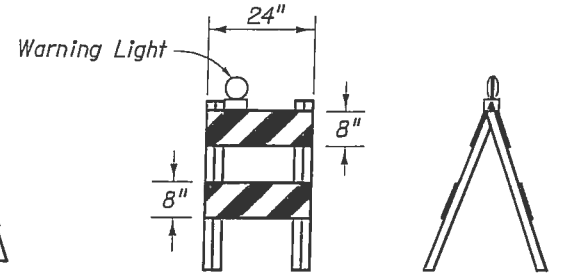


POST MOUNT A-FRAME

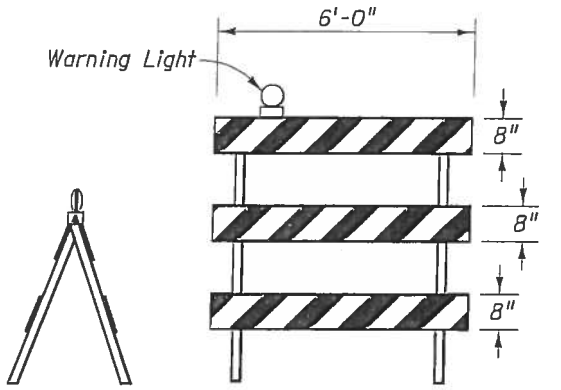
VERTICAL PANEL



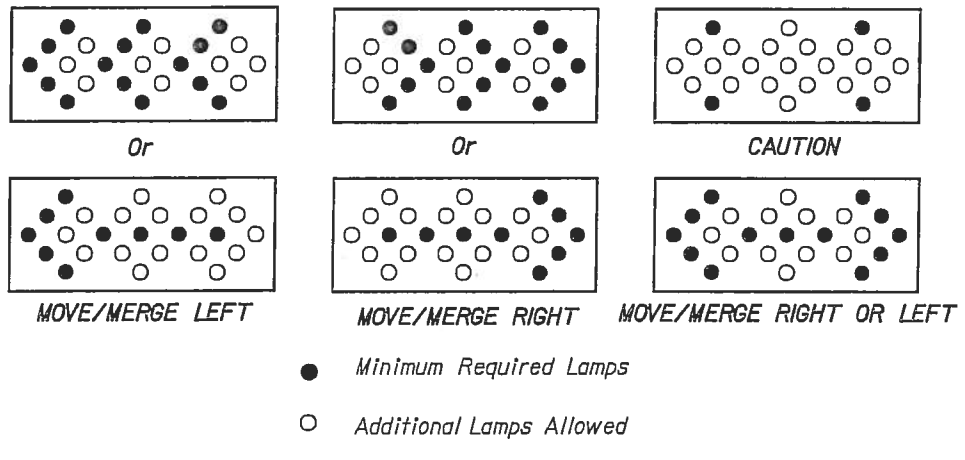
TYPE I BARRICADE



TYPE II BARRICADE



TYPE III BARRICADE



MODES
ADVANCE WARNING ARROW PANELS

CHANNELIZING AND LIGHTING DEVICE AND ADVANCE WARNING ARROW PANEL NOTES

1. Only approved traffic control devices included on the Qualified Products List (QPL) may be used.
2. The FDOT approval number shall be engraved on the device at a convenient and readily visible location. Where engraving is not practical a water-resistant type label may be used.
3. The details shown on this sheet are for the following purposes: (a) For ease of identification and (b) To provide information that supplements or supercedes that provided by the MUTCD.
4. The Type III Barricade shall have a unit length of 6'-0" only. When barricades of greater lengths are required those lengths shall be in multiples of the 6'-0" unit. Signs used in conjunction with Type III Barricades may be mounted on or above the barricade. These signs should not cover more than 50 percent of the top two rails or 33 percent of the total area of the three rails.
5. During hours of darkness, warning lights shall be used on drums, vertical panels, Type I, Type II and Type III barricades in accordance with 'Warning Lights' Sheet 3.
6. Ballast shall not be placed on top rails or any striped rails or higher than 13" above the driving surface.
7. For rails less than 3'-0" long, 4" stripes shall be used.
8. When Advance Warning Arrow Panels are used at night, the intensity of the flashers shall be reduced during darkness when lower intensities are desirable.
9. A single arrow panel shall not be used to merge traffic laterally more than one lane. When arrow panels are used to close multiple lanes, a single panel shall be used at the merging taper for each closed lane.
10. Cones shall:
    1. Be used only in work zones where workers are present.
    2. Not exceed 2 miles in length of use at any one time nor exceed a 12 hour work period.
    3. Have as a minimum, one designated person for the purpose of continuous monitoring and maintenance of cones during lane closures.
    4. Be reflectorized as per the MUTCD with Department approved reflective collars when used at night.
11. The splicing of sheeting is not permitted on either channelizing devices or MOT signs.

IDENTIFICATIONS - CHANNELIZING AND LIGHTING DEVICES AND ADVANCE WARNING ARROW PANEL MODES

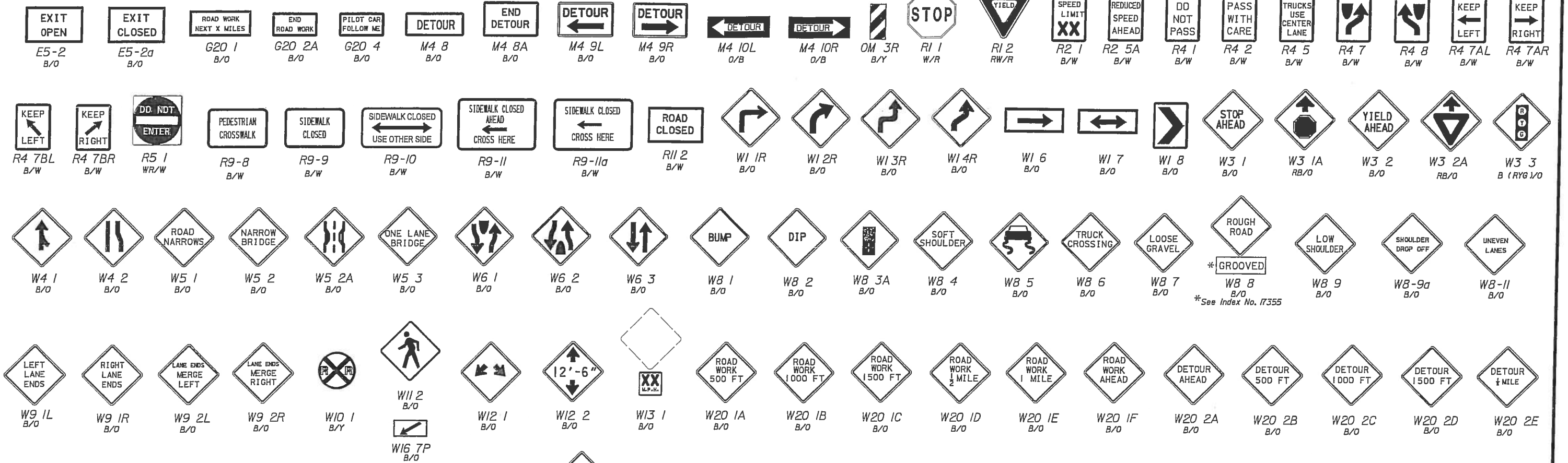
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL THROUGH WORK ZONES
GENERAL INFORMATION FOR
TRAFFIC CONTROL THROUGH WORK ZONES

	Names	Dates
Designed By		12/87
Drawn By		12/87
Checked By		12/87

Approved By
Roadway Design Engineer

Revision	Sheet No.	Index No.
04	8 of 10	600



COLOR CODES

Legend and/or Symbol / Background

O-Orange (Reflectorized)
B-Black (Non-Reflectorized)
W-White (Reflectorized)
R-Red (Reflectorized)
Y-Yellow (Reflectorized)
G-Green (Reflectorized)

Note:

1. *When standard orange flags or flashing warning lights are used in conjunction with signs, they shall not block the sign face.*
2. *The sign shields, symbols and messages contained on this sheet are provided for ready reference to those signs used in the development of the 600 series Design Standards and are commonly used in the development of traffic control plans.*
   For additional signs and sign detail information refer to the STANDARD HIGHWAY SIGNS MANUAL as specified in the MUTCD. Special signs for traffic control plans will be as approved by the State Traffic Plans Engineer.
   The sign codes shown on this sheet are for the purpose of identifying cell names found in the Traffic Control Cell Library (TCZ.Cel).
   The STANDARD HIGHWAY SIGNS MANUAL should be referenced for the official sign codes for use in the development of traffic control plans.
   See Index No. 17355 for MOT sign details.

COMMONLY USED WARNING AND REGULATORY SIGNS IN WORK ZONES

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

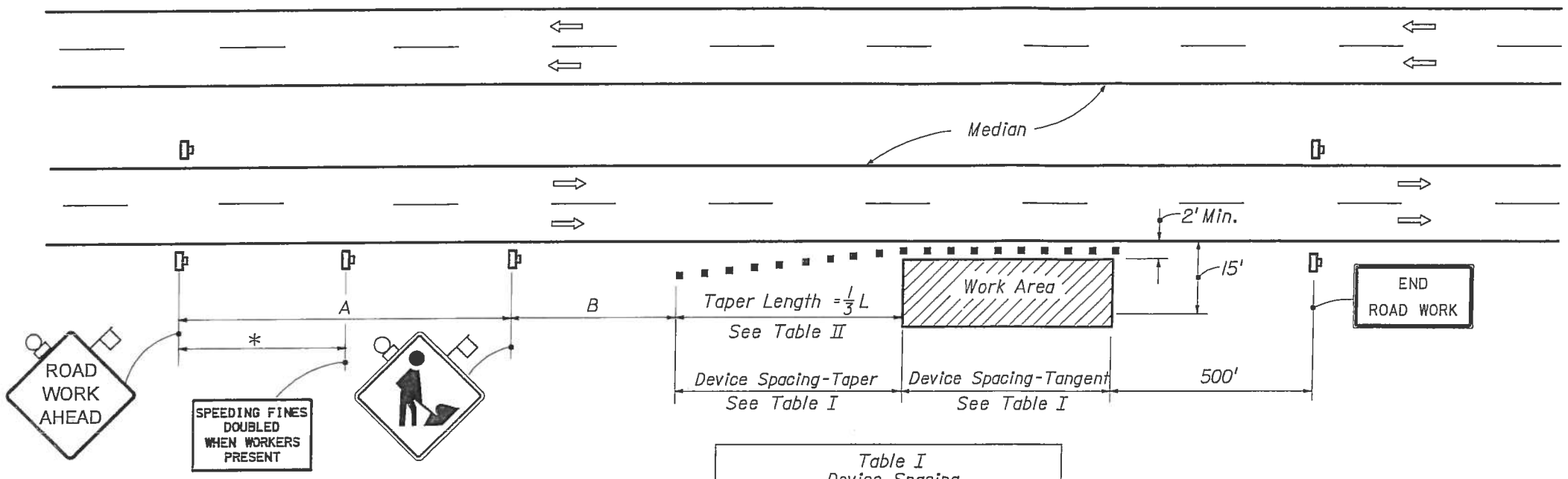
TRAFFIC CONTROL THROUGH WORK ZONES

GENERAL INFORMATION FOR TRAFFIC CONTROL THROUGH WORK ZONES

	Names	Dates
Designed By		12/87
Drawn By		12/87
Checked By		12/87

Approved By: James A. Mill
Roadway Design Engineer

Revision	Sheet No.	Index No.
04	9 of 10	600



DISTANCE BETWEEN SIGNS		
Speed	Spacing (ft)	
	A	B
40 mph or less	200	200
45 mph	350	350
50 mph or greater	500	500

* 500' beyond the ROAD WORK AHEAD sign or midway between signs whichever is less.

SYMBOLS

- Work Area
- Sign With 18" x 18" (Min.) Orange Flag And Type B Light
- Channelizing Device (See Index No. 600)
- Work Zone Sign
- Lane Identification + Direction of Traffic

Table I
Device Spacing

Speed (mph)	Max. Distance Between Devices (ft)			
	Cones or Tubular Markers		Type I or Type II Barricades or Vertical Panels or Drums	
	Taper	Tangent	Taper	Tangent
25	25	50	25	50
30 to 45	25	50	30	50
50 to 70	25	50	50	100

GENERAL NOTES

1. All vehicles, equipment, workers, and their activities are restricted to one side of the roadway.
2. If the work operation encroaches on the through traffic lanes or when four or more work vehicles enter the through traffic lanes in a one hour period (excluding establishing and terminating the work area) a flagger shall be provided and a FLAGGER sign shall be substituted for the WORKERS sign. The flagger shall be positioned at the point of vehicle entry or departure from the work area.
3. This TCZ plan also applies to work performed in the median more than 2' but less than 15' from the edge of travelway.
4. When work is being performed on a multilane undivided roadway the signs normally mounted in the median (as shown) shall be omitted.
5. WORKERS signs to be removed or fully covered when no work is being performed.
6. SHOULDER WORK sign may be used as an alternate to the WORKER symbol sign.
7. When a side road intersects the highway within the TTC zone, additional TTC devices shall be placed in accordance with other applicable TCZ Indexes.
8. For general TCZ requirements and additional information refer to Index No. 600.

DURATION NOTES

1. Signs and channelizing devices may be omitted if all of the following conditions are met:
   a) Work operations are 60 minutes or less.
   b) Vehicles in the work area have high-intensity, rotating, flashing, oscillating, or strobe lights operating.

Table II
Taper Length - Shoulder

Speed (mph)	1/3 L (ft) 8' Shldr.	10' Shldr.	12' Shldr.	Notes
25	28	35	42	$L=\frac{WS^2}{60}$
30	40	50	60	
35	55	68	82	
40	72	90	107	
45	120	150	180	L = WS
50	133	167	200	
55	147	183	220	
60	160	200	240	
65	173	217	260	
70	187	233	280	

8' minimum shoulder width.

1/3 L = Length of shoulder taper in feet

W = Width of total shoulder in feet (combined paved and unpaved width)

S = Posted speed limit (mph)

CONDITIONS

WHERE ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCROACH THE AREA CLOSER THAN 15' BUT NOT CLOSER THAN 2' TO THE EDGE OF TRAVEL WAY.

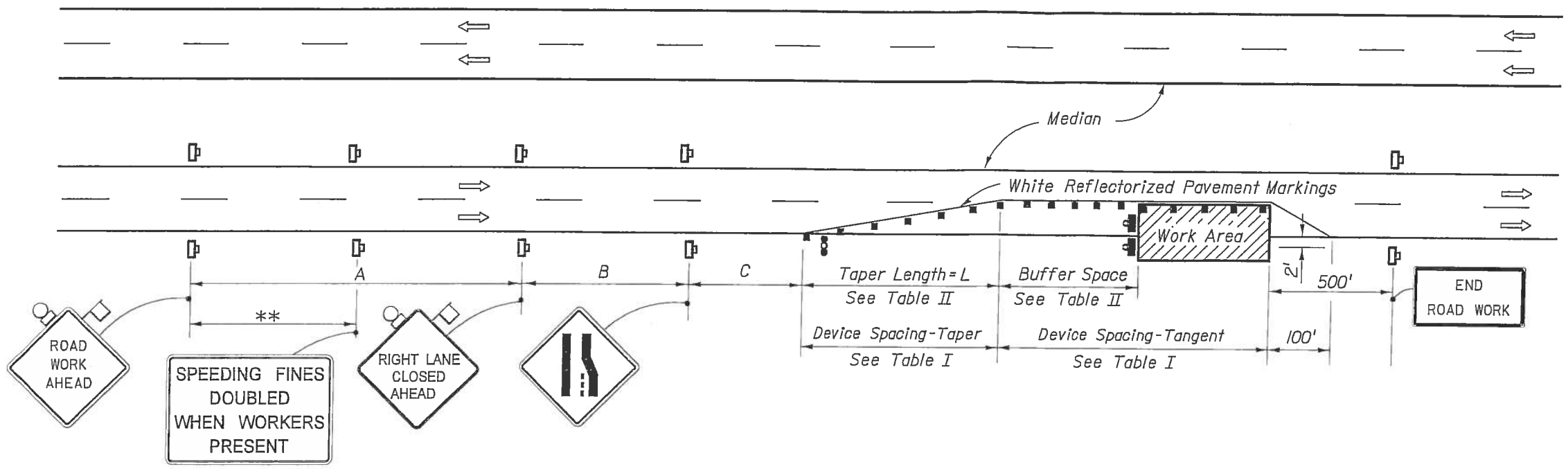


Table II Buffer Space and Taper Length			
Speed (mph)	Buffer Space	Taper Length (12' Lateral Transition)	
	Dist. (ft)	L (ft)	Notes (Merge)
25	155	125	$L=\frac{WS^2}{60}$
30	200	180	
35	250	245	
40	305	320	
45	360	540	L = WS
50	425	600	
55	495	660	
60	570	720	
65	645	780	
70	730	840	

When Buffer Space cannot be attained due to geometric constraints, the greatest attainable length shall be used, but not less than 200 ft.

For lateral transitions other than 12', use formula for L shown in the notes column.
Where:
L = Length of taper in feet
W = Width of lateral transition in feet
S = Posted speed limit (mph)

DISTANCE BETWEEN SIGNS			
Speed	Spacing (ft)		
	A	B	C
40 mph or less	200	200	200
45 mph	350	350	350
50 mph	500	500	500
*55 mph or greater	2640	1640	1000

* The ROAD WORK 1 MILE sign may be used as an alternate to the ROAD WORK AHEAD sign and the RIGHT LANE CLOSED $\frac{1}{2}$ MILE sign may be used as an alternate to the RIGHT LANE CLOSED AHEAD sign.

** 500' beyond the ROAD WORK AHEAD sign or midway between signs whichever is less.

SYMBOLS

- Work Area
- Sign With 18"x 18" (Min.) Orange Flag And Type B Light
- Channelizing Device (See Index No. 600)
- Type I, Type II Or Type III Barricade Or Vertical Panel Or Drum (With Flashing Light)
- Work Zone Sign
- Advance Warning Arrow Panel

GENERAL NOTES

1. Work operations shall be confined to one traffic lane, leaving the adjacent lane open to traffic.
2. All vehicles, equipment, workers, and their activities are restricted to one side of the roadway.
3. On undivided highways the median signs as shown are to be omitted.
4. When work is performed in the median lane on divided highways the channelizing device plan is inverted and left lane closed and lane ends signs substituted for the right lane closed and lane end signs.

   The same applies to undivided highways with the following exceptions:
   (a) Work shall be confined within one median lane.
   (b) Additional barricades, cones, or drums shall be placed along the centerline abutting the work area and across the trailing end of the work area.

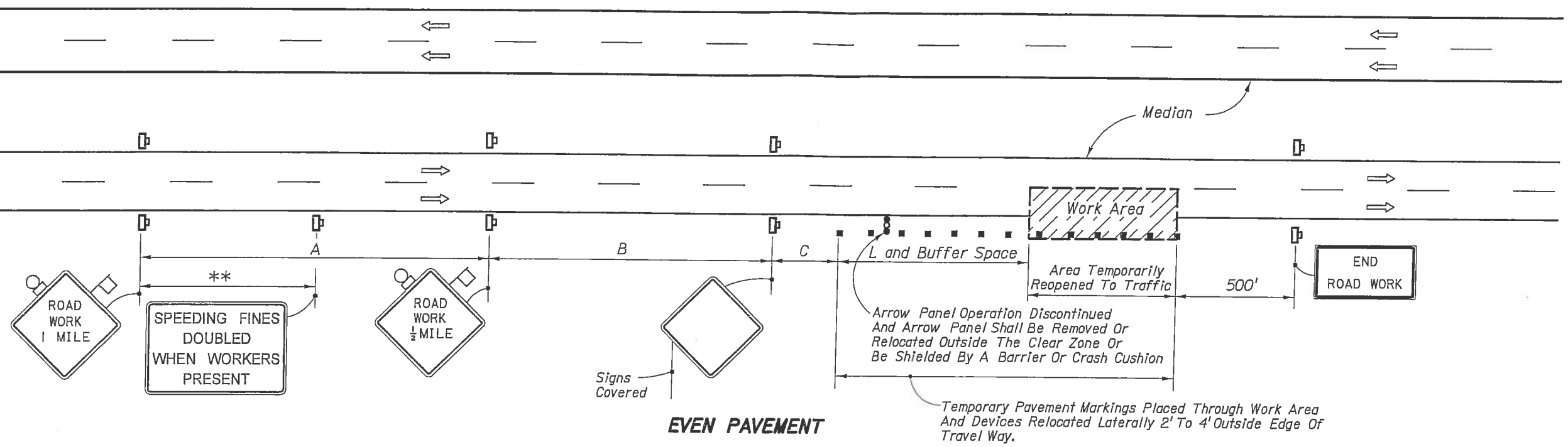
   When work on undivided highways occurs across the centerline so as to encroach on both median lanes, the inverted plan is applied to the approach of both roadways.
5. Signs and traffic control devices are to be modified in accordance with INTERMITTENT WORK STOPPAGE details (sheet 2 of 2) when no work is being performed and the highway is open to traffic.
6. The two channelizing devices directly in front of the work area may be omitted provided vehicles in the work area have high-intensity rotating, flashing, oscillating, or strobe lights operating.
7. When paved shoulders having a width of 8 ft. or more are closed, channelizing devices shall be used to close the shoulder in advance of the merging taper to direct vehicular traffic to remain within the travel way. See Index No. 612 for shoulder taper formulas.
8. When a side road intersects the highway within the TTC zone, additional TTC devices shall be placed in accordance with other applicable TCZ Indexes.
9. This TCZ plan does not apply when work is being performed in the middle lane(s) of a six or more lane highway. See Index No. 614.
10. For general TCZ requirements and additional information refer to Index No. 600.

DURATION NOTES

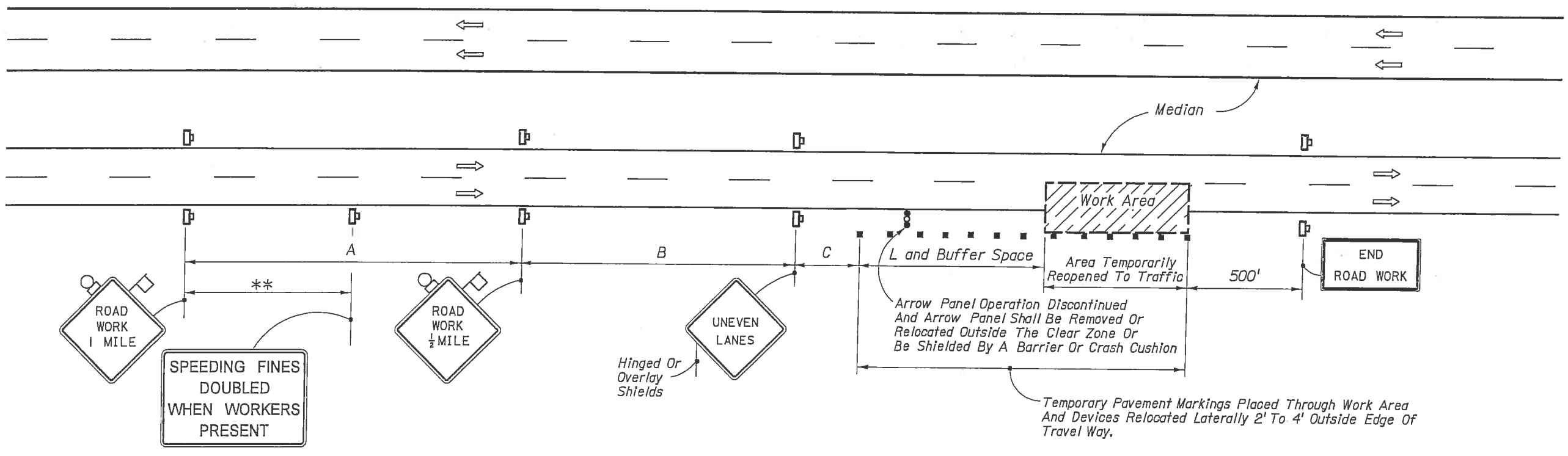
1. Temporary white edgeline may be omitted for work operations less than 3 days.
2. Signs, arrow panel and buffer space may be omitted if all of the following conditions are met:
   a) Work operations are 60 minutes or less.
   b) Speed limit is 45 mph or less.
   c) No sight obstructions to vehicles approaching the work area for a distance equal to the buffer space and the taper length combined.
   d) Vehicles in the work area have high-intensity, rotating, flashing, oscillating, or strobe lights operating.
   e) Volume and complexity of the roadway has been considered.

CONDITIONS

WHERE ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCROACH ON THE LANE ADJACENT TO EITHER SHOULDER AND THE AREA 2' OUTSIDE THE EDGE OF TRAVEL WAY.



EVEN PAVEMENT



UNEVEN PAVEMENT

INTERMITTENT WORK STOPPAGE - LANE REOPENED TO TRAFFIC

2006 FDOT Design Standards

MULTILANE, WORK WITHIN THE TRAVEL WAY MEDIAN OR OUTSIDE LANE

Last Revision	Sheet No.
07/01/05	2 of 2
Index No.	
613	

Sign Identification Number	SIGN			TYPE OF SIGN BRACKET			
	PROFILE	SIZE	SQ. FT.	WIND ZONE 60	70	80	90
1		24 x 24	1.7	2 - I	2 - I	2 - I	2 - I
2		30 x 30	2.7	2 - I	2 - I	2 - I	2 - I
3		36 x 36	3.9	2 - I	2 - I	2 - I	2 - I
4		48 x 48	6.9	1 -II & 1 -I	1 -II & 1 -I	1 -II & 1 -I	1 -II & 1 -I
5		60 x 60	10.8	DO NOT USE SINGLE COLUMN			
6		36 Ø	7.1	2 - I	2 - I	2 - I	2 - I
7		48 Ø	12.6	2 - II	2 - II	2 - II	2 - II
8		18 x 18	1.9	2 - I	2 - I	2 - I	2 - I
9		24 x 24	3.3	2 - I	2 - I	2 - I	2 - I
10		30 x 30	5.2	2 - I	2 - I	2 - I	2 - I
11		36 x 36	7.5	2 - I	2 - I	2 - I	2 - I
12		48 x 48	13.3	2 - II	2 - II	2 - II	2 - II
13		12 x 24 24 x 24	5.4	1 - I 2- I	1 - I 2- I	1 - I 2- I	1 - I 2- I
14		15 x 30 24 x 24	6.5	1 - I 2- I	1 - I 2- I	1 - I 2- I	1 - I 2- I
15		12 x 24 24 x 30	6.3	1 - I 2- I	1 - I 2- I	1 - I 2- I	1 - I 2- I
16		15 x30 24 x 30	7.4	1 - I 2- I	1 - I 2- I	1 - I 2- I	1 - I 2- I
17		15 x 30 36 x 36	10.8	1 - I 2- I	1 - I 2- I	1 - I 2- I	1 - I 2- I
18		15 x 30 36 x 45	12.6	1 - I 2- I	1 - I 2- II	1 - I 2- II	1 - I 2- II
19		15 x 30 48 x 48	16.7	1 - I 2- II	1 - I 2- II	1 - I 2- II	1 - I 2- II
20		15 x 30 48 x 60	20.1	DO NOT USE SINGLE COLUMN			
21		12 x 24 24 x 24 15 x 21	7.6	1 - I 2- I 1 - I	1 - I 2- I 1 - I	1 - I 2- I 1 - I	1 - I 2- I 1 - I
22		15 x 30 24 x 24 15 x 21	8.7	1 - I 2- I 1 - I	1 - I 2- I 1 - I	1 - I 2- I 1 - I	1 - I 2- I 1 - I
23		12 x 24 24 x 30 15 x 21	8.5	1 - I 2- I 1 - I	1 - I 2- I 1 - I	1 - I 2- I 1 - I	1 - I 2- I 1 - I
24		15 x 30 24 x 30 15 x 21	9.6	1 - I 2- I 1 - I	1 - I 2- I 1 - I	1 - I 2- I 1 - I	1 - I 2- I 1 - I
25		12 x 24 24 x 24	6.0	1 - I 2- I	1 - I 2- I	1 - I 2- I	1 - I 2- I
26		24 x 24 15 x 21	5.2	2- I 1- I	2- I 1- I	2- I 1- I	2- I 1- I
27		15 x 30 24 x 24	7.1	1 - I 2- I	1 - I 2- I	1 - I 2- I	1 - I 2- I
28		12 x 24 24 x 30	7.0	1 - I 2- I	1 - I 2- I	1 - I 2- I	1 - I 2- I
29		24 x 30 15 x 21	7.2	2- I 1 - I	2- I 1 - I	2- I 1 - I	2- I 1 - I

Sign Identification Number	SIGN			TYPE OF SIGN BRACKET			
	PROFILE	SIZE	SQ. FT.	WIND ZONE 60	70	80	90
30		15 x 30 24 x 30	8.1	1 - I 2- I	1 - I 2- I	1 - I 2- I	1 - I 2- I
31		15 x 21 36 x 30	9.7	1 - I 2- I	1 - I 2- I	1 - I 2- I	1 - I 2- I
32		15 x 30 36 x 30	10.6	1 - I 2- I	1 - I 2- I	1 - I 2- I	1 - I 2- I
33		12 x 24 24 x 24 15 x 21	8.2	1 - I 2- I 1 - I	1 - I 2- I 1 - I	1 - I 2- I 1 - I	1 - I 2- I 1 - I
34		15 x 30 24 x 24 15 x 21	9.3	1 - I 2- I 1 - I	1 - I 2- I 1 - I	1 - I 2- I 1 - I	1 - I 2- I 1 - I
35		12 x 24 24 x 30 15 x 21	9.2	1 - I 2- I 1 - I	1 - I 2- I 1 - I	1 - I 2- I 1 - I	1 - I 2- I 1 - I
36		15 x 30 24 x 30 15 x 21	10.3	1 - I 2- I 1 - I	1 - I 2- I 1 - I	1 - I 2- I 1 - I	1 - I 2- I 1 - I
37		12 x 24 , 12 x 24 24 x 24 , 24 x 24 15 x 21	13.6	1 - II 2- II 1 - I	1 - II 2- II 1 - I	1 - II 2- II 1 - I	1 - II 2- II 1 - I
38		12 x 24 , 12 x 24 24 x 24 , 24 x 24 15 x 21 , 15 x 21	15.2	1 - II 2- II 1 - II	1 - II 2- II 1 - II	1 - II 2- II 1 - II	1 - II 2- II 1 - II
39		12 x 24 , 12 x 24 24 x 24 , 24 x 24 15 x 21 , 15 x 21	16.4	1 - II 2- II 1 - II	1 - II 2- II 1 - II	1 - II 2- II 1 - II	1 - II 2- II 1 - II
40		15 x 30 , 15 x 30 24 x 30 ,24 x 30 15 x 21 , 15 x 21	19.2	DO NOT USE SINGLE COLUMN			
41		12 x 24 , 12 x 24 12 x 24 , 12 x 24 24 x 24 , 24 x 24 15 x 21 , 15 x 21	20.4	1 - II 1 - II 2- II 1 - II	1 - II 1 - II 2- II 1 - II	1 - II 1 - II 2- II 1 - II	1 - II 1 - II 2- II 1 - II
42		15 x 21 24 x 24 12 x 24 , 12 x 24 24 x 24 , 24 x 24 15 x 21 , 15 x 21	22.6	1 - I 2- I 1 - II 2- II 1 - II	1 - I 2- I 1 - II 2- II 1 - II	1 - I 2- I 1 - II 2- II 1 - II	1 - I 2- I 1 - II 2- II 1 - II
43		12 x 24 24 x 30 15 x 21 12 x 24 , 12 x 24 24 x 24 , 24 x 24 15 x 21 , 15 x 21	25.6	DO NOT USE SINGLE COLUMN			
44		18 x 12	1.5	1 - I	1 - I	1 - I	1 - I
45		12 x 36	3.0	1- I	1- I	1- I	1- I
46		18 x 24	3.0	2- I	2- I	2- I	2- I
47		24 x 18	3.0	2- I	2- I	2- I	2- I
48		18 x 18 9 x 12	3.0	2- I 1 - I	2- I 1 - I	2- I 1 - I	2- I 1 - I
49		18 x 30	3.8	2- I	2- I	2- I	2- I
50		30 x 40	3.9	2- I	2- I	2- I	2- I
51		24 x 24	4.0	2- I	2- I	2- I	2- I
52		24 x 24	4.0	2- I	2- I	2- I	2- I
53		18 x 36	4.5	2- I	2- I	2- I	2- I
54		30 x 30	4.7	2- I	2- I	2- I	2- I

Sign Identification Number	SIGN			TYPE OF SIGN BRACKET			
	PROFILE	SIZE	SQ. FT.	WIND ZONE 60	70	80	90
55		30 x 24	5.0	2- I	2- I	2- I	2- I
56		36 x 48	5.6	2- II	2- II	2- II	2- II
57		24 x 35	6.0	2- I	2- I	2- I	2- I
58		36 x 24	6.0	2- I	2- I	2- I	2- I
59		30 x 30	6.3	2- I	2- I	2- I	2- I
60		30 x 30	6.3	2- I	2- I	2- I	3- I
61		36 x 36	6.75	2- I	2- I	2- I	2- I
62		30 x 36	7.5	2- I	2- I	2- I	2- I
63		36 x 30	7.5	2- I	2- I	2- I	2- I
64		24 x 48	8.0	2- II	2- II	2- II	2- II
65		12 x 36 30 x 30	8.2	1 - I 2- I	1 - I 2- I	1 - I 2- I	1 - I 2- I
66		30 x 42	8.8	2- I	2- I	2- II	2- II
67		36 x 36	9.0	2- I	2- I	2- I	2- I
68		36 x 36	9.0	2- I & 1 - II	2- I & 1 - II	2- I & 1 - II	2- I & 1 - II
69		12 x 36 30 x 30	9.3	1 - I 2- I	1 - I 2- I	1 - I 2- I	1 - I 2- I
70		30 x 30 18 x 24	9.3	2- I 2- I	2- I 2- I	2- I 2- I	3- I 2- I
71		48 x 64	9.9	DO NOT USE SINGLE COLUMN			
72		30 x 48	10.0	2- II	2- II	2- II	2- II
73		12 x 36 36 x 36	10.5	1 - I 2- I	1 - I 2- I	1 - I 2- I	1 - I 2- I
74		30 x 54	11.3	DO NOT USE SINGLE COLUMN			
75		36 x 48	12.0	2- II	2- II	2- II	2- II
76		48 x 36	12.0	2- I	2- I	2- I	2- I
77		36 x 35 18 x 24	12.0	2-I& 1 -II 2- I	2-I& 1 -II 2- I	2-I& 1 -II 2- I	2-I& 1 -II 2- I
78		48 x 48	12.0	1 - I & 1 - II	1 - I & 1 - II	1 - I & 1 - II	1 - I & 1 - II
79		30 x 60	12.5	DO NOT USE SINGLE COLUMN			
80		48 x 48	16.0	2- II	2- II	2- II	2- II
81		48 x 48	16.0	2- I & 1 - II	2- I & 1 - II	2- I & 1 - II	2- I & 1 - II
82		30 x 78	16.3	DO NOT USE SINGLE COLUMN			
83		30 x 84	17.5	DO NOT USE SINGLE COLUMN			
84		48 x 54	18.0	DO NOT USE SINGLE COLUMN			
85		42 x 66	19.3	DO NOT USE SINGLE COLUMN			
86		60 x 48	20.0	3- II	3- II	3- II	3- II
87		66 x 48	22.0	3- II	3- II	3- II	3- II
88		60 x 72	30.0	SEE NOTE			
89		96 x 48	32.0	DO NOT USE SINGLE COLUMN			
90		24 x 78	13.0	DO NOT USE SINGLE COLUMN			
91		36 x 78	19.5	DO NOT USE SINGLE COLUMN			

NOTE:

The Gore Exit Panel (E5-1a) detailed in the Standards Highway Signs Manual 2002 edition, Sign Identification Number 88, can be installed on a single column with the following stipulations:

1. Maximum height to bottom of sign is 14'.
2. Column size is 6" aluminum round tube with $\frac{1}{4}$" wall.
3. 3 Type II Brackets required for attachment.
4. For Type II Bracket details, Attachment and General Notes see sheet 3 of 4.
5. Footing shall be 2'-0" Ø x 5'-0" deep.
6. For Slip Base Details, see sheet 4 of 4.

Sign size is in inches unless other wise specified.

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

SINGLE COLUMN GROUND SIGNS

	Names	Dates	Approved By: State Structures Design Engineer		
Designed By	RES	10/94	Revision	Sheet No.	Index No.
Drawn By	DDDS	10/94	04	1 of 4	11860
Checked By	DER	11/94			

GENERAL NOTES

GENERAL SPECIFICATIONS : Florida Department of Transportation Standard Specifications for Road and Bridge Construction and Supplements thereto.

DESIGN SPECIFICATIONS : Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, AASHTO 1994.

ALUMINUM : Except as noted below, Aluminum Materials shall meet the requirements of Aluminum Association Alloy 6061-T6 (ASTM B209, B221, or B308).

1. Permitted Alternate for Sheets and Plates--- Alloy 5154-H38 (ASTM-B209)

CONCRETE : All concrete shall be Class I (Special), the specified compressive strength at 28 days (f'c) shall be 3 ksi min.

SIGN PANELS : Sign Panels shall be 0.08 inches min. thick Aluminum Plate with all corners rounded. See sign layout sheet. Panels are to be degreased, etched, neutralized and treated with Alodine 1200, Iridine 14-2, Bonderite 721 or equal. No stenciling permitted on panels.

ALUMINUM BOLTS, NUTS & LOCKWASHERS : Aluminum bolts shall meet the requirements of ASTM F468, Alloy 2024-T4. The Bolts shall have an Anodic Coating of at least 0.0002 inches thick and be chromate sealed. Lockwashers shall meet the requirements of Aluminum Association Alloy 7075-T6 (ASTM B221). Nuts shall meet the requirements of ASTM F-467, Alloy 6061-T6 or 6262-T9.

STAINLESS STEEL BOLTS, NUTS AND LOCKWASHERS : Stainless Steel Bolts, Nuts and Lockwashers conforming to ASTM F593 Alloy Group 2 Condition A, CW2, or SH4 may be provided in lieu of Aluminum Bolts, Nuts and Washers.

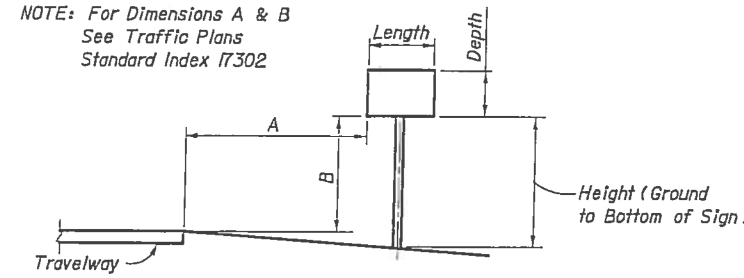
U-BOLTS, NUTS & LOCKWASHERS : U-Bolts, Nuts and Lockwashers shall meet the requirements of ASTM A307, Grade A and shall be galvanized in accordance with ASTM A153.

INSTALLING FRANGIBLE COLUMN SUPPORTS : Columns (Posts) may be installed by driving the columns in accordance with Index Nos. 11861 thru 11865, or as an alternate method the contractor may set the columns (Posts) to the depth indicated in preformed holes backfilled with suitable material tamped in layers not thicker than 6" to provide adequate compaction.

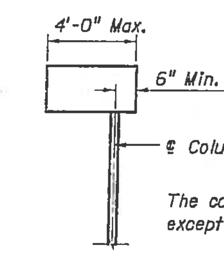
SHOP DRAWINGS : When Type C ground sign supports are furnished and fabricated in accordance with these plans, shop drawings will NOT be required for approval by the Engineer.

HOW TO USE THIS TABLE : Select the appropriate Sign Profile and Size to determine the Sign Identification Number. If the exact Sign Size of all Components are not listed, select the appropriate profile and larger Component Sizes. This table also gives the Quantity and Type of Sign Brackets required for each Sign for each Wind Zone. Where the Sign Size is given as a Vertical and Horizontal Dimension, the Vertical Dimension (Depth) is given first and the Horizontal Dimension (Length) is given last. For Column Sizes, Heights and Footings see appropriate (Wind Zone or Height - 14' Max.) sheets titled "Column Sizes, Column Heights and Footings" Index Numbers 11861 thru 11865. No Shop or Field Splice is allowed in Sign Panels. All Panels shall be furnished in one piece.

NOTE: For Dimensions A & B See Traffic Plans Standard Index 17302



TYPICAL SECTION



The column size shall be as tabulated in the Standard except that the size shall not be smaller than $3\frac{1}{2}$" Ø.

Note: All cantilever sign installations shall comply with standard Index 17302. The sign shall be supported by an aluminum round column with concrete footing and breakaway support. All sign brackets shall be Type II.

CANTILEVER SIGN

WIND SPEEDS BY COUNTY

ZONE NO. 1 (60 M.P.H.)

Alachua, Baker, Bay, Bradford, Calhoun, Clay, Columbia, Escambia, Gadsden, Gilchrist, Hamilton, Holmes, Jackson, Jefferson, Lafayette, Lake, Leon, Liberty, Madison, Marion, Okaloosa, Putnam, Santa Rosa, Sumter, Suwannee, Union, Walton and Washington Counties.

ZONE NO. 2 (70 M.P.H.)

Citrus, De Soto, Dixie, Duval, Flagler, Franklin, Glades, Gulf, Hardee, Hendry, Hernando, Highlands, Hillsborough, Levy, Nassau, Okeechobee, Orange, Osceola, Pasco, Pinellas, Polk, Seminole, St. Johns, Taylor and Wakulla Counties.

ZONE NO. 3 (80 M.P.H.)

Brevard, Charlotte, Collier, Indian River, Lee, Manatee, Martin, Palm Beach, Sarasota, St. Lucie and Volusia Counties.

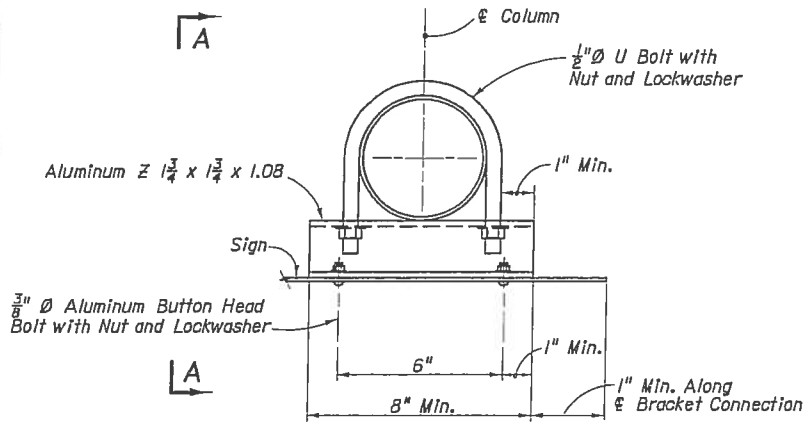
ZONE NO. 4 (90 M.P.H.)

Broward, Dade and Monroe Counties.

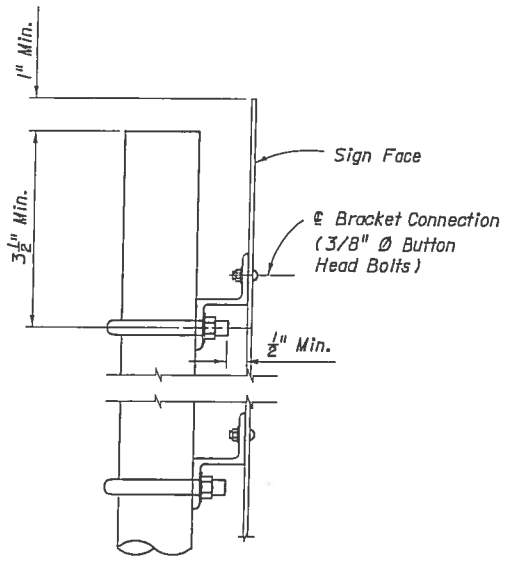
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

SINGLE COLUMN GROUND SIGNS

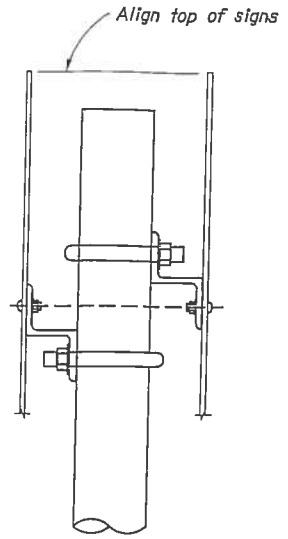
	Names	Dates	Approved By: State Structures Design Engineer		
Designed By	RES	10/94			
Drawn By	DODS	10/94	Revision	Sheet No.	Index No.
Checked By	DER	11/94	04	2 of 4	11860



TYPE I BRACKET

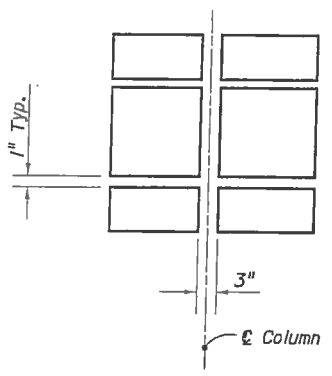


VIEW AA

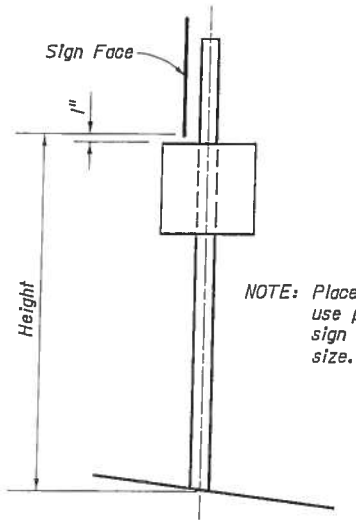


NOTE: Use profile of largest sign and height to bottom of largest sign to determine column size.

SIGNS BACK-TO-BACK

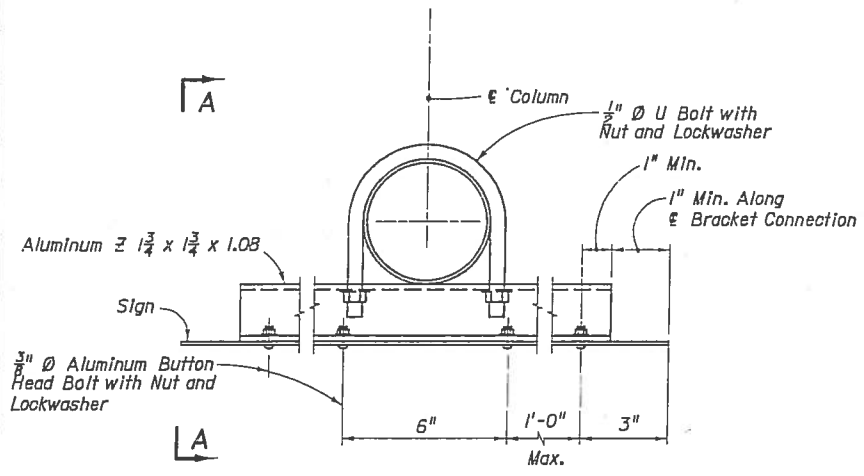


SIGN CLEARANCE

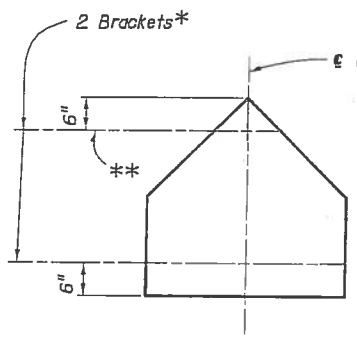


NOTE: Place largest sign on top, use profile of largest sign to determine column size.

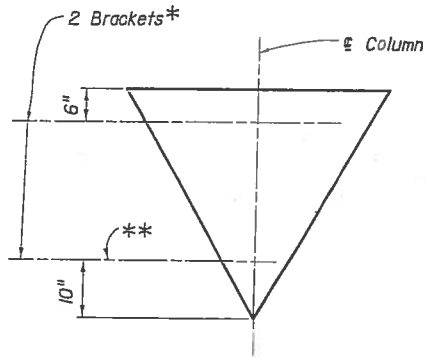
SIGNS AT 90°



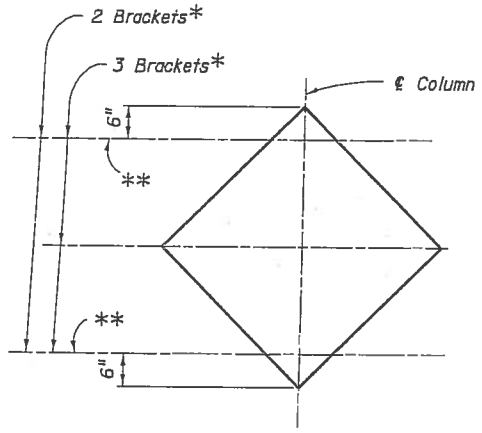
TYPE II BRACKET (SINGLE SIGN)



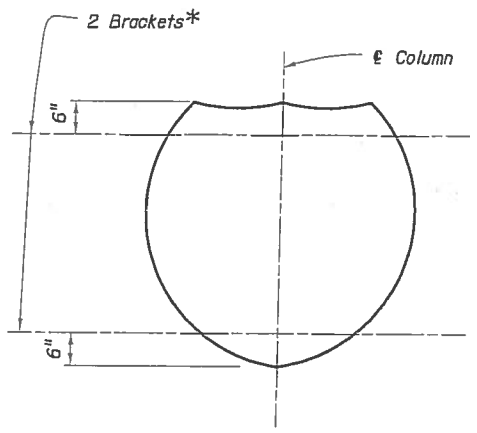
SCHOOL



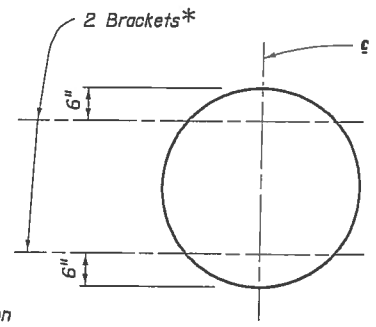
YIELD



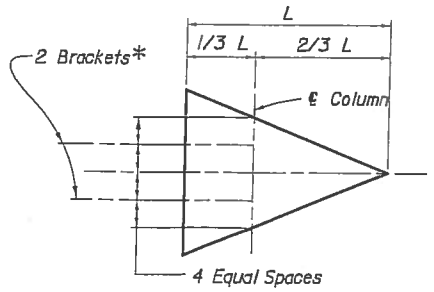
DIAMOND



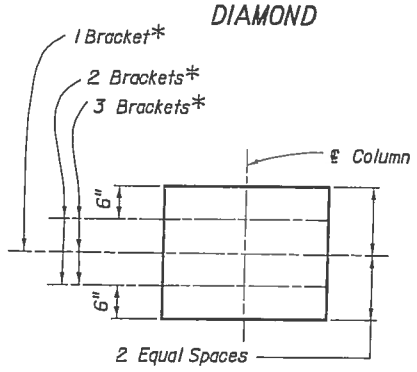
SHIELD



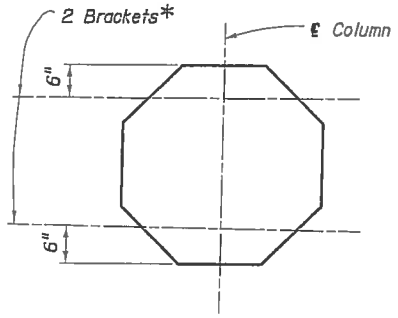
RAILROAD



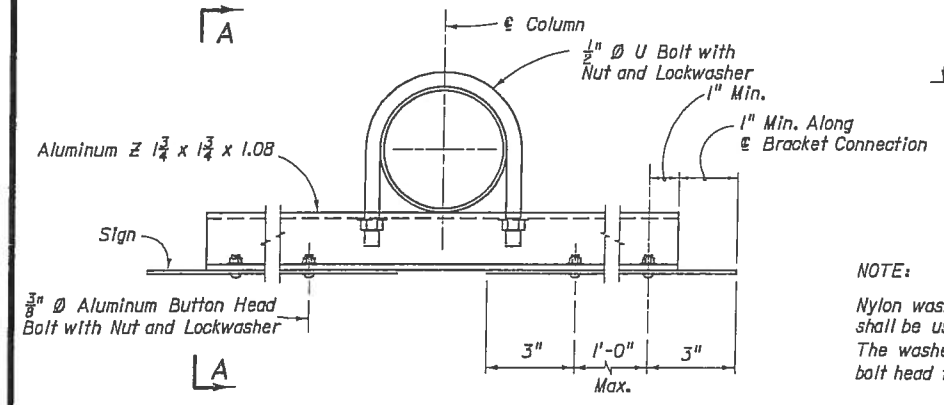
PENNANT



RECTANGLE



STOP



TYPE II BRACKET (DOUBLE SIGNS)

NOTE: $\frac{5}{16}$" Ø Stainless Steel Hex Head Bolts with Flat Washer under Head and Lockwasher under Nut may be used in lieu of ⅜" Ø Aluminum Button Head Bolts.

NOTE:

Nylon washers provided by the sheeting supplier shall be used on all ground mounted signs. The washers shall be installed under the sign bolt head to protect the sheeting.

BRACKET LOCATIONS (SEE VIEW AA)

* NOTE : The above Bracket locations apply at the ℄ of Bracket-Sign Connection (3/8" Ø Button Head Bolts). See View AA. The locations also apply at Double Signs configurations. When installing back-to-back signs the topmost bracket location of one of the signs will require adjustment as shown on the above detail.

** NOTE : Use Type I Bracket at the apex location (always).

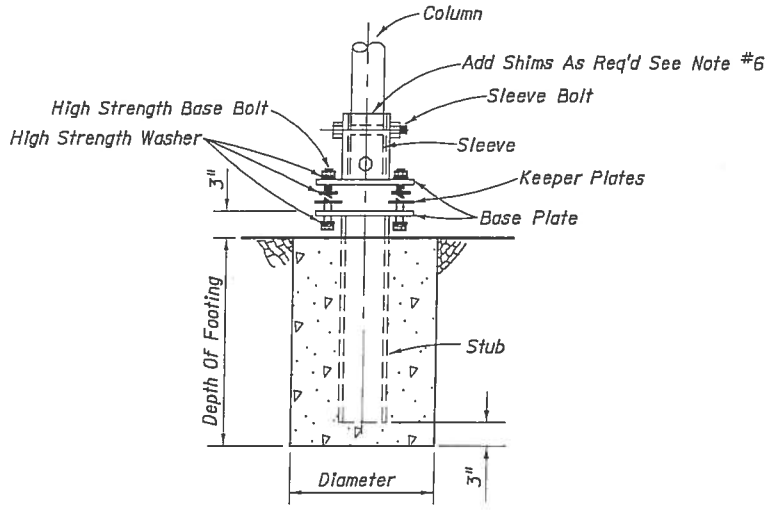
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

SINGLE COLUMN GROUND SIGNS

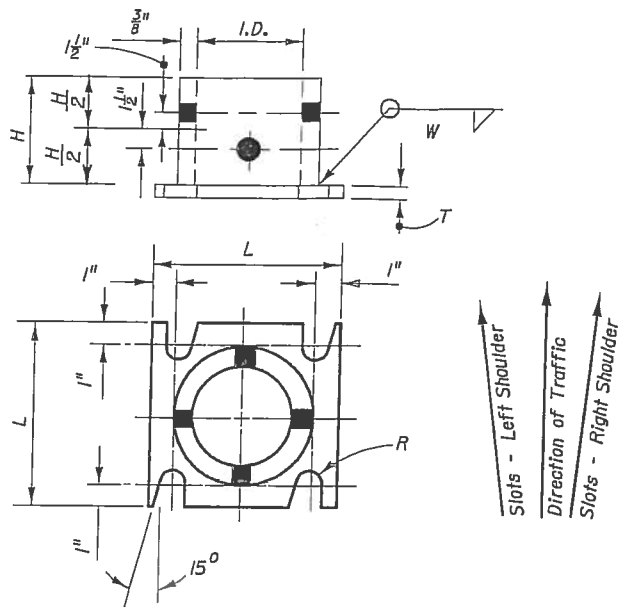
	Names	Dates
Designed By	RES	10/94
Drawn By	DDDS	10/94
Checked By	DER	11/94

Approved By: W. [signature]
State Structures Design Engineer

Revision	Sheet No.	Index No.
00	3 of 4	11860



SLIP BASE AND FOOTING DETAIL

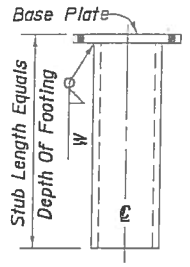


SLEEVE & BASE PLATE DETAILS (SINGLE BEVELED SLOT)

(Right Shoulder Shown)
For Left Shoulder, Plate Slot Bevels are opposite hand from that shown.

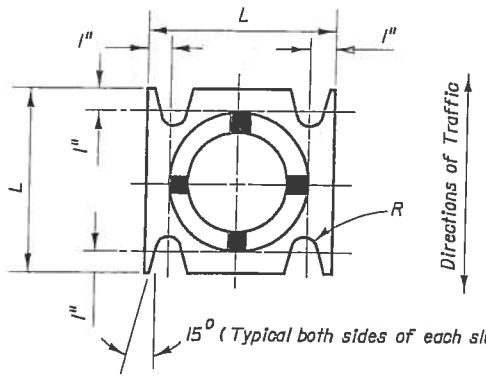
SLIP BASE NOTES :

1. The Inside Diameter (I.D.) of the sleeve shall be no more than $\frac{1}{16}$" larger than the Outside Diameter (O.D.) of the Column.
2. The sleeve bolts shall be $\frac{1}{2}$" Ø with locknuts. The bolts shall be galvanized steel (ASTM A-307) or Aluminum Association Alloy 2024-T4 or 6061-T6 (ASTM B-211).
3. The base bolts, nuts and washers shall be high strength ASTM A-325 and shall have an electroplated zinc coating SC3, Type II applied in accordance with ASTM B633.
4. An alternate cast base of aluminum alloy 356 and T6 temper in lieu of the fabricated base may be submitted for approval by the Engineer. If a cast base is used the stub will be the same as the column and will be bolted to the casting.
5. Assemble the slip base connection in the following manner :
   Connect column to sleeve using two (2) $\frac{1}{2}$" Ø machine bolts.
   Assemble top base plate to stub base plate using high strength bolts with three (3) hardened washers per bolt. One (1) washer per bolt and two (2) bolt keeper plates go between the base plates.
   Use shim stock as required to plumb the column.
   Tighten all bolts the maximum possible with a 12" to 15" wrench to bed the washers and shims and to clear the bolt threads. Loosen each bolt one (1) turn and retighten to the prescribed torque (see table). Bolts shall be tightened with properly calibrated wrenches under the supervision of the project engineer.
   Burr threads at junction with nut using a center punch to prevent nut loosening.
6. Use galvanized steel shims to obtain a tight fit between the column face and the sleeve. Place shims in all quadrants between the $\frac{1}{2}$" Ø sleeve bolts. The shim length shall be 1" shorter than the height of the sleeve.
7. Base plates may be either fabrications or castings and may have either single or double beveled slots.
8. Both fabricated and cast base assemblies were impact tested by the Texas Transportation Institute, College Station, TX on February 10, 2003, and both alternate assemblies were determined to be compliant with the performance recommendations of the National Cooperative Highway Research Program (NCHRP) Report 350.



Stub Size Equals Min. Sleeve Size Or Longer

STUB DETAIL



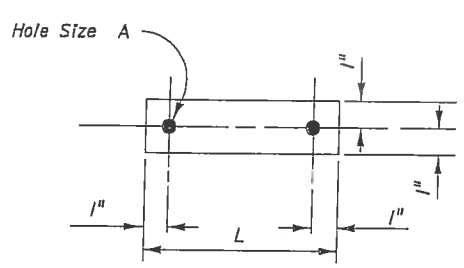
SLEEVE & BASE PLATE DETAILS (DOUBLE BEVELED SLOTS)

(Right Shoulder Shown)
For Left Shoulder, Plate Slot Bevels are opposite hand from that shown.

SLIP BASE DETAILS

Note: Unless noted otherwise, all dimensions are in inches

Column Size	Sleeve I.D. (Max)	Sleeve Height H	Weld W	Base Plate L	Base Plate T	Radius R	Base Bolt Size	Base Bolt Length	Base Bolt Torque Ft-lbs	Base Bolt Torque In-lbs	Hole Size A
4 x 1/4	4 1/16	6	5/8	8	3/4	11/32	5/8	3	29	355	11/16
4 1/2 x 1/4	4 5/16	6	5/8	8	7/8	11/32	5/8	3 1/4	29	355	11/16
5 x 1/4	5 1/16	7	5/8	8	7/8	11/32	5/8	3 1/4	29	355	11/16
6 x 1/4	6 1/16	8	11/16	9	1	7/16	3/4	3 1/2	48	580	13/16
8 x 5/16	8 1/16	10	3/4	11	1	1/2	7/8	3 3/4	53	640	15/16



0.0149" Thick Alum. Strip-2 Req'd Per Base

BOLT KEEPER DETAIL

COLUMN SIZE, COLUMN HEIGHT & COLUMN FOOTINGS

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

SINGLE COLUMN GROUND SIGNS

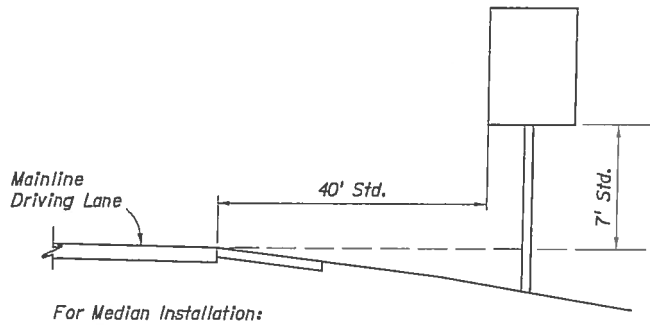
	Names	Dates
Designed By	DER	10/94
Drawn By	DDDS	10/94
Checked By	RES	11/94

Approved By: W. W. Hall
State Structures Design Engineer

Revision	Sheet No.	Index No.
04	4 of 4	11860

CASE I

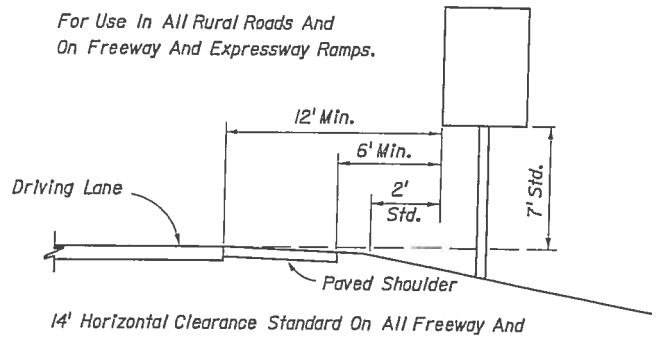
For use on Freeway and Expressway systems for signs on mainline.



For Median Installation:
If Median Width Does Not Allow Std. Offset From Both Roadways, Center Sign In Median.

CASE II

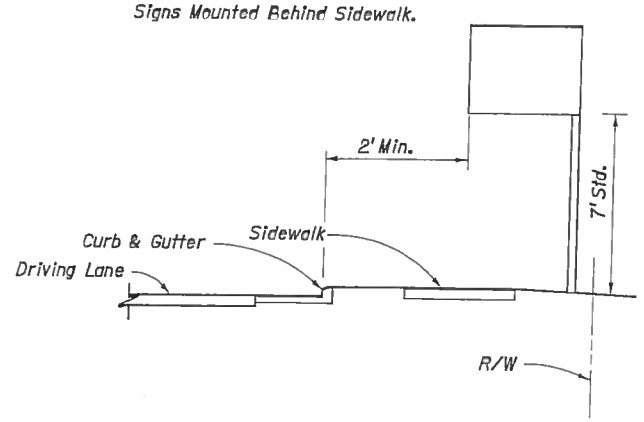
For Use In All Rural Roads And On Freeway And Expressway Ramps.



14' Horizontal Clearance Standard On All Freeway And Expressway Ramps
For Sections Without Paved Shoulder The 6' Min Does Not Apply.

CASE III

For Use On All Roads With Signs Mounted Behind Sidewalk.

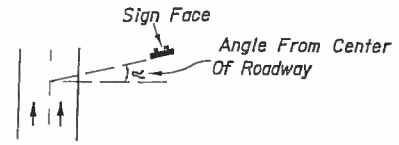


GENERAL NOTES:

1. The typical sections shown hereon serve as a guide for locating the traffic signs required under various roadside conditions. For size and details of sign construction and footing, refer to the appropriate standard index drawing for roadside sign.

2. It shall be the CONTRACTORS responsibility to verify the length of sign supports in the field prior to fabrication.

3. Roadside signs shall be installed at an angle of 1 to 4 degrees away from the traffic flow (see illustration). Shoulder mounted signs shall be rotated counterclockwise and median mounted signs rotated clockwise. Signs on curves shall be mounted as noted above from the perpendicular to the motorist line of sight.



4. The setback for stop and yield signs may be reduced to 3' minimum from the driving lane if required for visibility in business or residential sections with no curb and speeds of 30 MPH or less.

5. The mounting heights are measured from the bottom of the sign panel to a horizontal line extended from the edge of the driving lane. If the standard heights cannot be met, the minimum heights are as follows:

Expressway & Freeway Systems	7'
Other Roadway Systems	
Rural	5'
Urban (including residential with parking and /or pedestrian activity)	7'

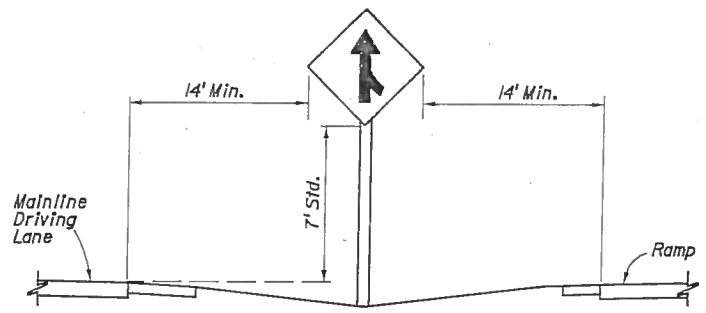
If a secondary sign is mounted below the major sign, the major sign shall be at least 8' and the secondary sign at least 5' for expressway & freeway systems and for other systems the height to the secondary sign shall be at least 4' for rural and 6' for urban sections.

6. Sign supports should never be placed in the bottom of ditches where erosion might affect the proper operation of the breakaway feature.

7. Sign supports shall not reduce the accessible route /continuous passage to less than 3' min. clear width as required by the Americans with Disabilities Act (ADA) Accessibility Guidelines.

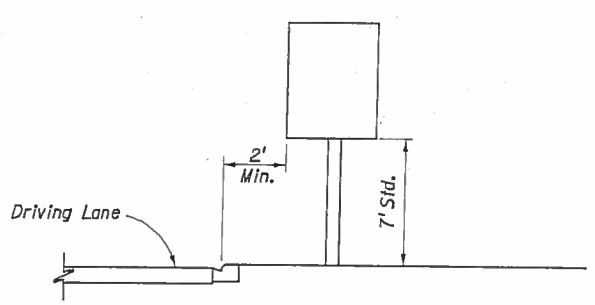
CASE IV (Merge Sign)

For Use On All Rural, Freeway And Expressway Systems.



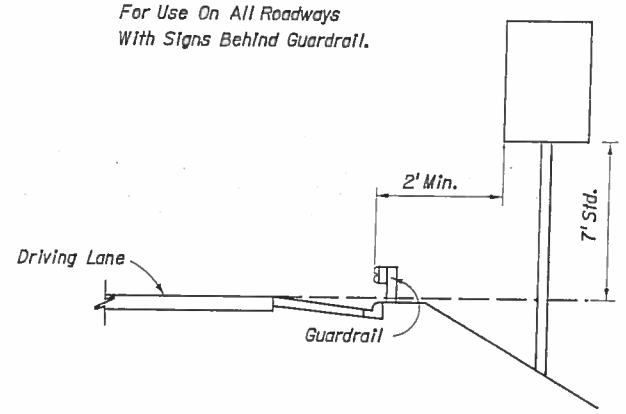
CASE V

For Use In Business Or Residential Areas Only.



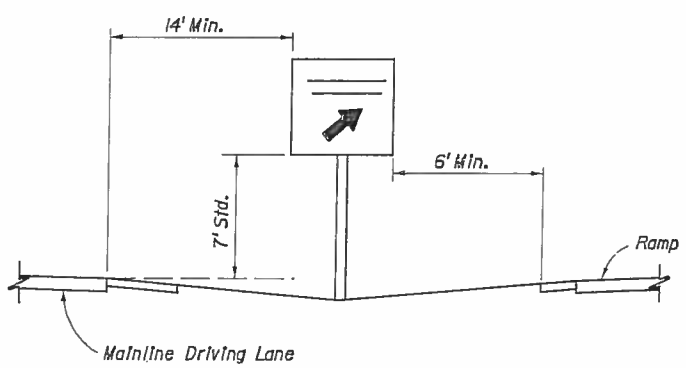
CASE VI

For Use On All Roadways With Signs Behind Guardrail.



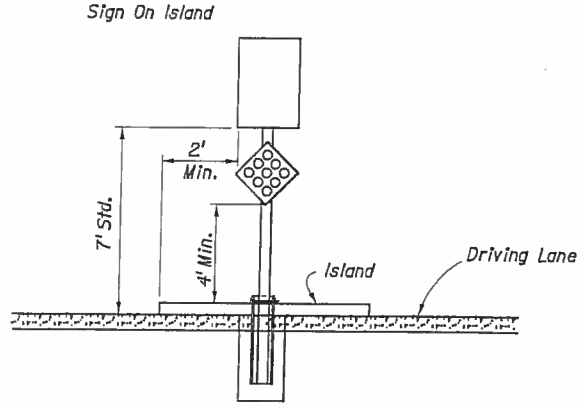
CASE VII (REST AREA & EXIT GORE SIGNS)

For Use On All Freeway And Expressway Systems



CASE VIII

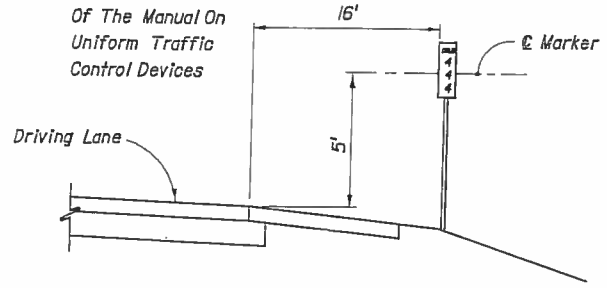
Sign On Island



Center Sign Column On Island

CASE IX (MILE POST MARKER)

For More Information Refer To Part 2D-46 Of The Manual On Uniform Traffic Control Devices



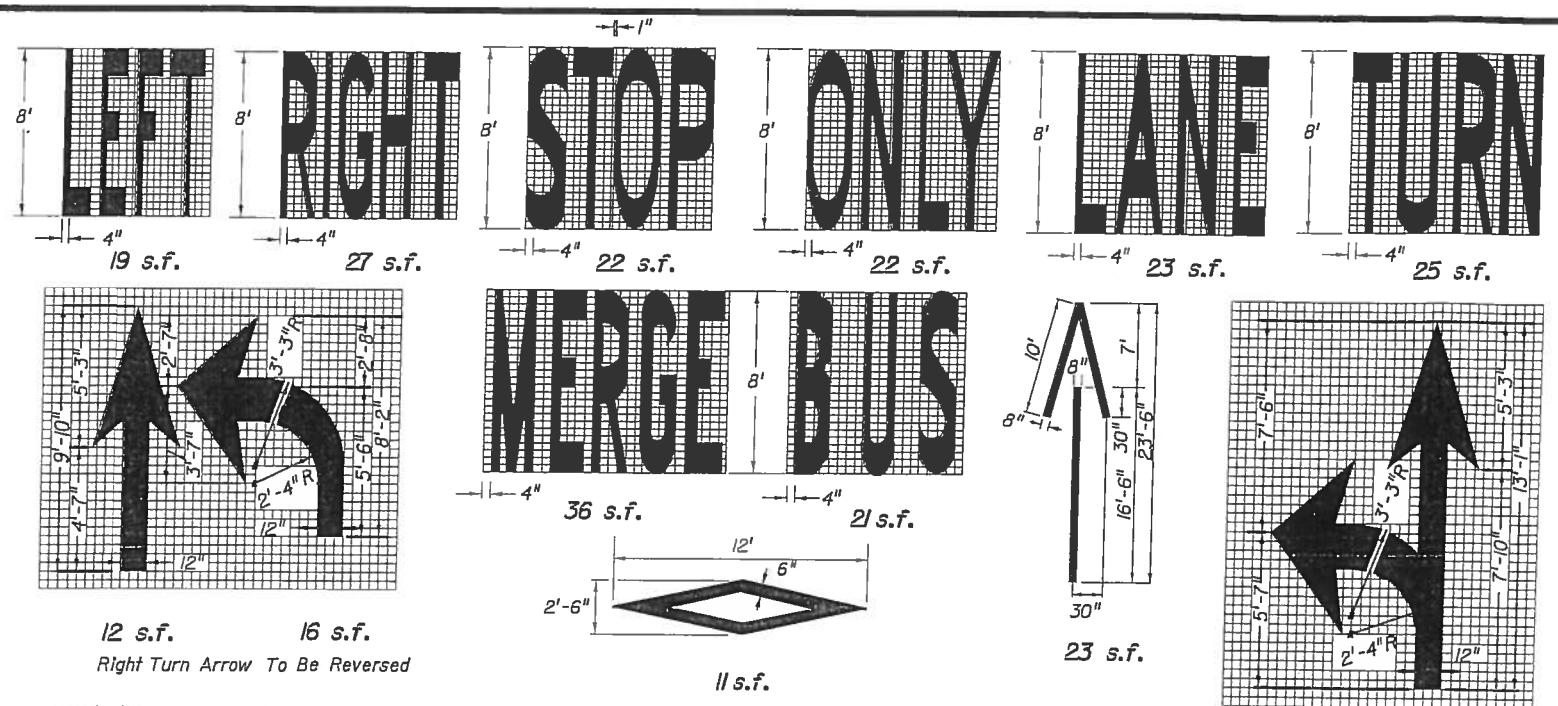
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

TYPICAL SECTIONS FOR PLACEMENT OF SINGLE & MULTI-COLUMN SIGNS

	Names	Dates
Designed By		3-75
Drawn By		
Checked By		

Approved By: Clarke Scott
State Traffic Standards Engineer

Revision	Sheet No.	Index No.
00	1 of 1	17302



NOTE: When arrow and pavement message are used together, the arrow shall be located down stream of the pavement message and shall be separated from the pavement message by a distance of 25' (Base of the arrow to the base of the message).

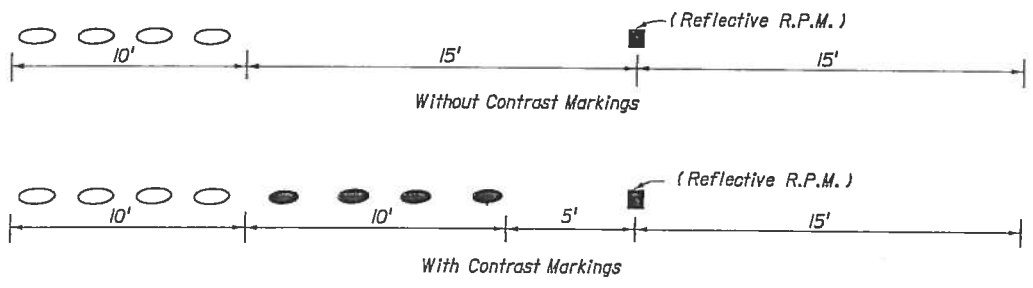
DIMENSIONS ARE WITHIN 1" ±

PAVEMENT ARROW AND MESSAGE DETAILS

BASIC COLOR RULE

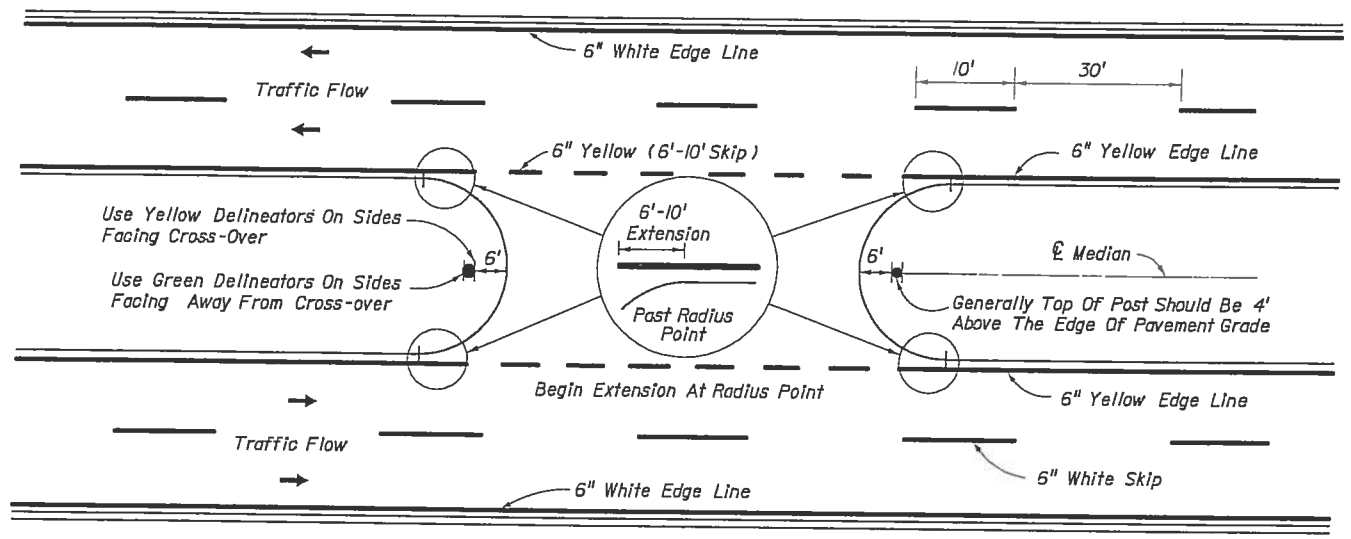
White lines separate traffic in the same direction.
Yellow lines separate traffic in opposing directions.
Yellow dotted lines may be used in special cases.

TYPES OF PERMANENT LONGITUDINAL LINES



NOTE: Ceramic Markers should not be installed unless specifically called for in the plans. Use is limited to high volume sections with ADT's greater than 50,000 where lane changing is to be discouraged or other areas where channelization is required.

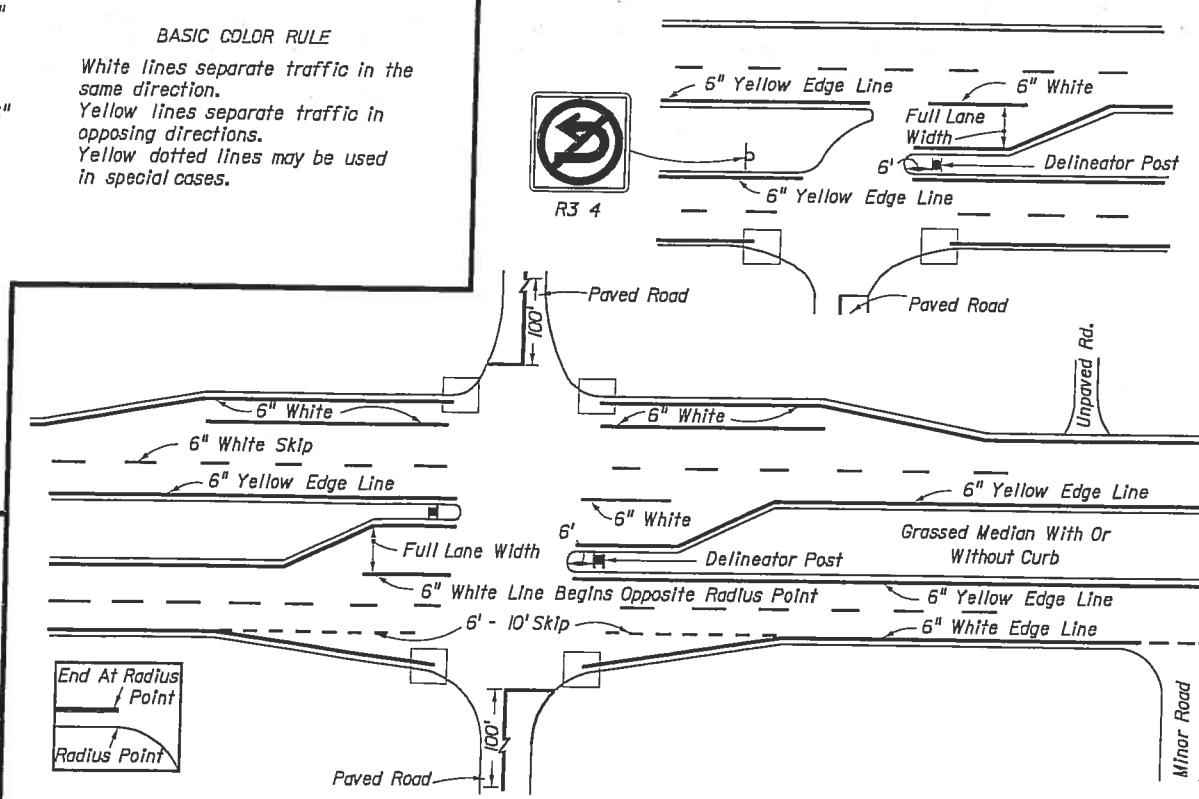
NON-REFLECTIVE CERAMIC PAVEMENT MARKER PLACEMENT



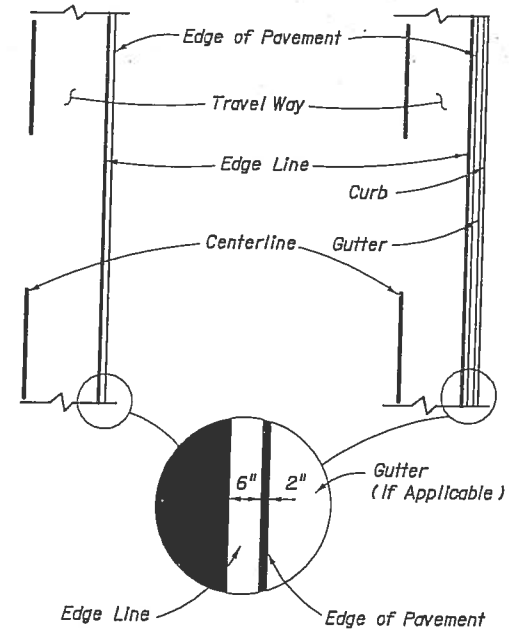
PAVEMENT MARKINGS AND DELINEATORS FOR MEDIAN CROSS-OVER

NOTE:

Markings applied to median noses shall be yellow in color.



PAVEMENT MARKINGS FOR INTERSECTIONS WITH MAJOR AND MINOR ROADS



PLACEMENT OF EDGE LINES

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

SPECIAL MARKING AREAS

	Names	Dates
Designed By		8-78
Drawn By		
Checked By		8-78

Approved By: Clarence Scott
State Traffic Standards Engineer

Revision	Sheet No.	Index No.
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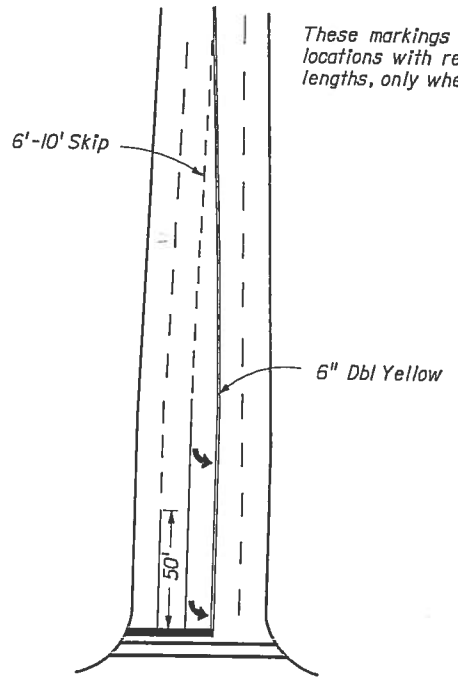
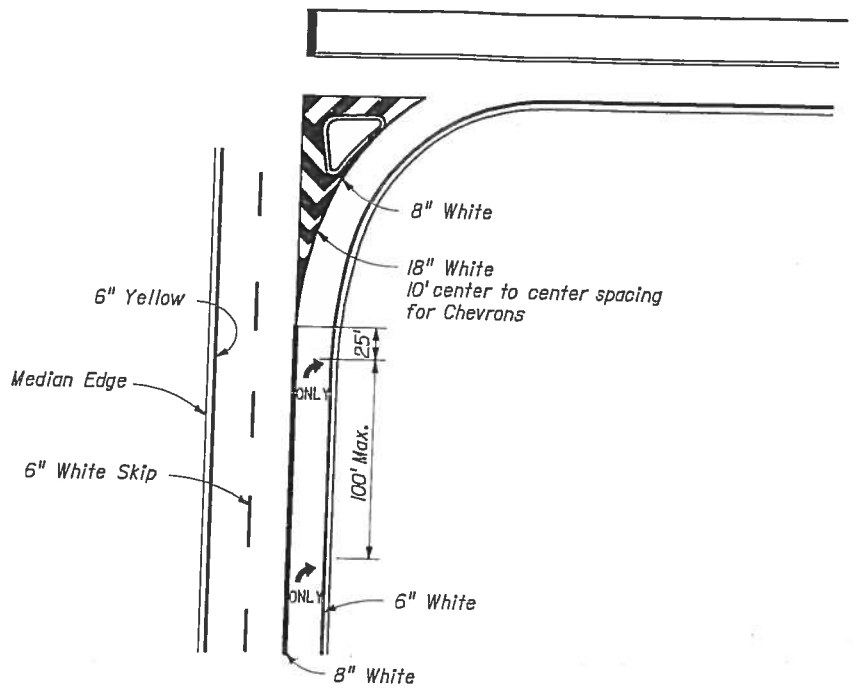
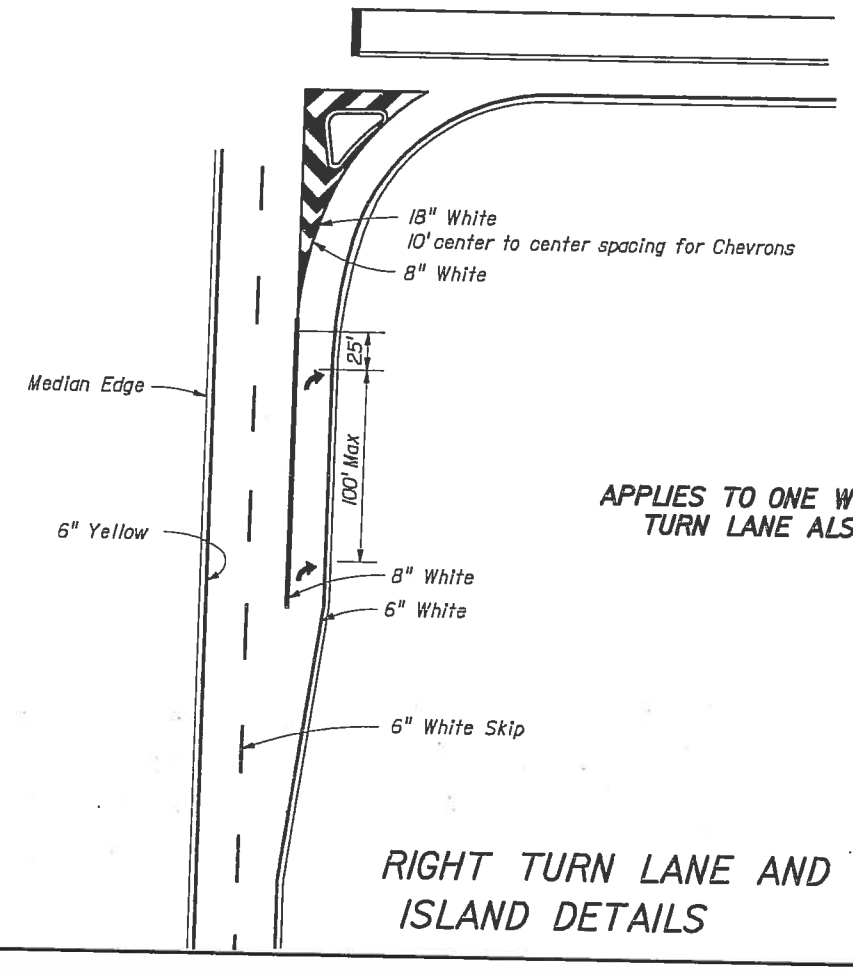


These markings may be used for locations with restricted left turn lengths, only when called for in plans.

RESTRICTED LEFT TURN MARKING

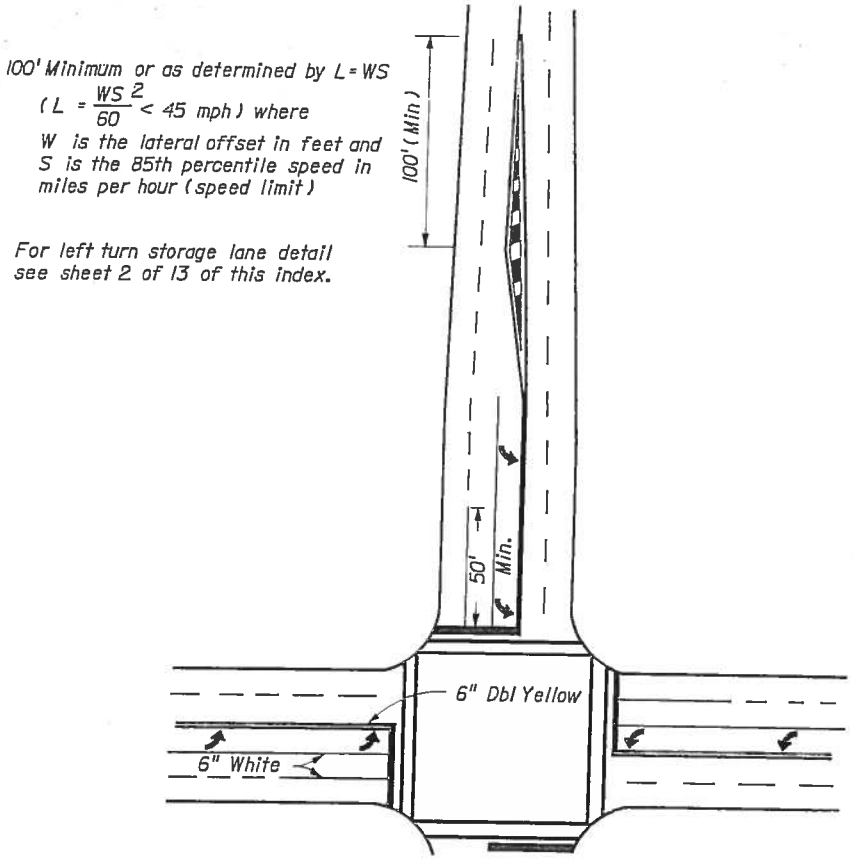


RIGHT TURN LANE DROP AND ISLAND DETAILS
LEFT TURN LANE DROP IS MIRROR IMAGE

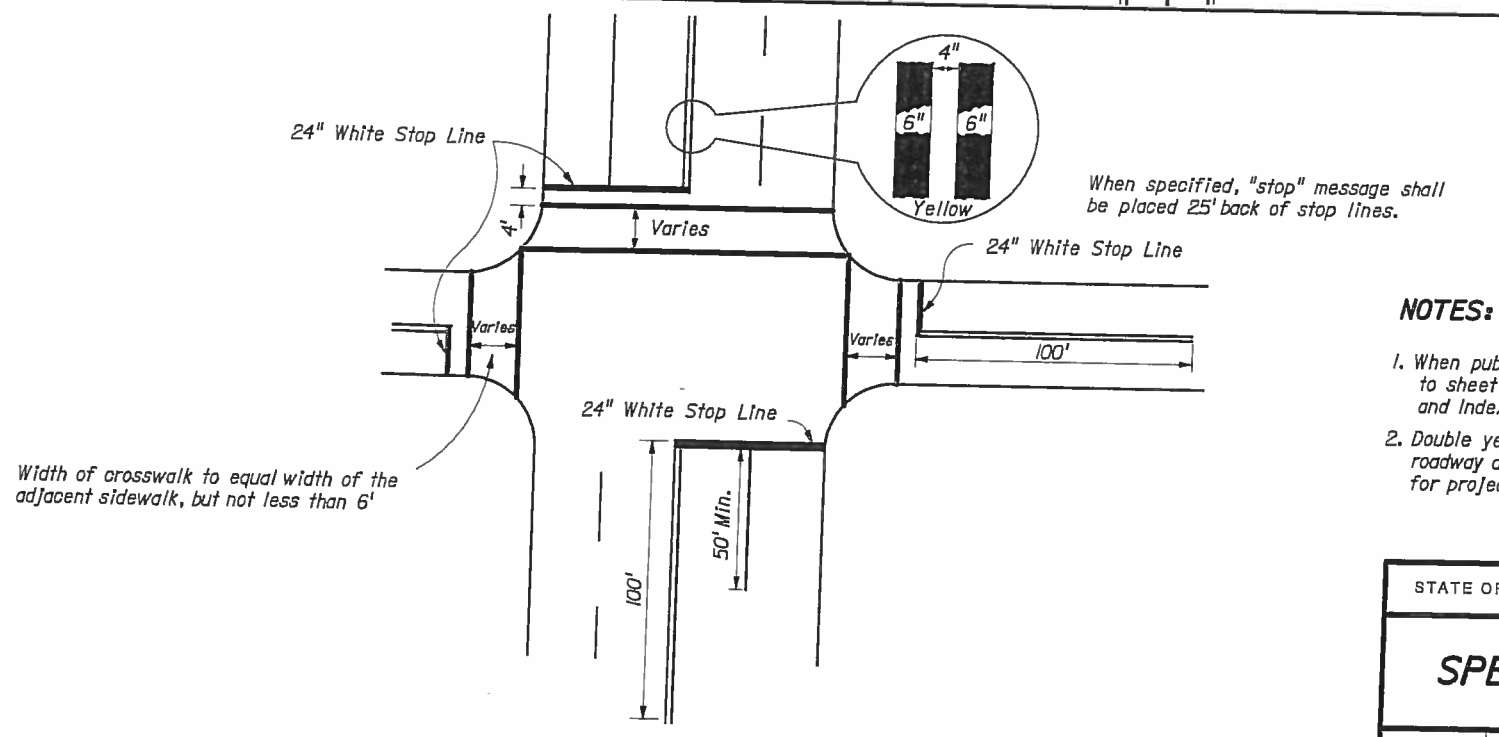


APPLIES TO ONE WAY LEFT TURN LANE ALSO

RIGHT TURN LANE AND ISLAND DETAILS



TYPICAL INTERSECTION 2 THRU LANES
PLUS LEFT TURN LANE, WITH CROSSWALK



STOP BARS, CROSSWALKS AND DOUBLE CENTER LINE DETAILS

NOTES:

1. When public sidewalk curb ramps are present, refer to sheet 2 of 13 & 7 of 13 of this index 17346 and Index No. 304 for crosswalk widths.
2. Double yellow longitudinal center lines on all roadway approaches shall be extended back 100' for projects involving intersection improvements only.

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

SPECIAL MARKING AREAS

	Names	Dates
Designed By		9-76
Drawn By		
Checked By		9-76

Approved By: Clarke Scott, State Traffic Standards Engineer

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