

CURB & GUTTER
 Modified Curb & Gutter
 Reverse Curb & Gutter
 Std. 7" Curb & Gutter

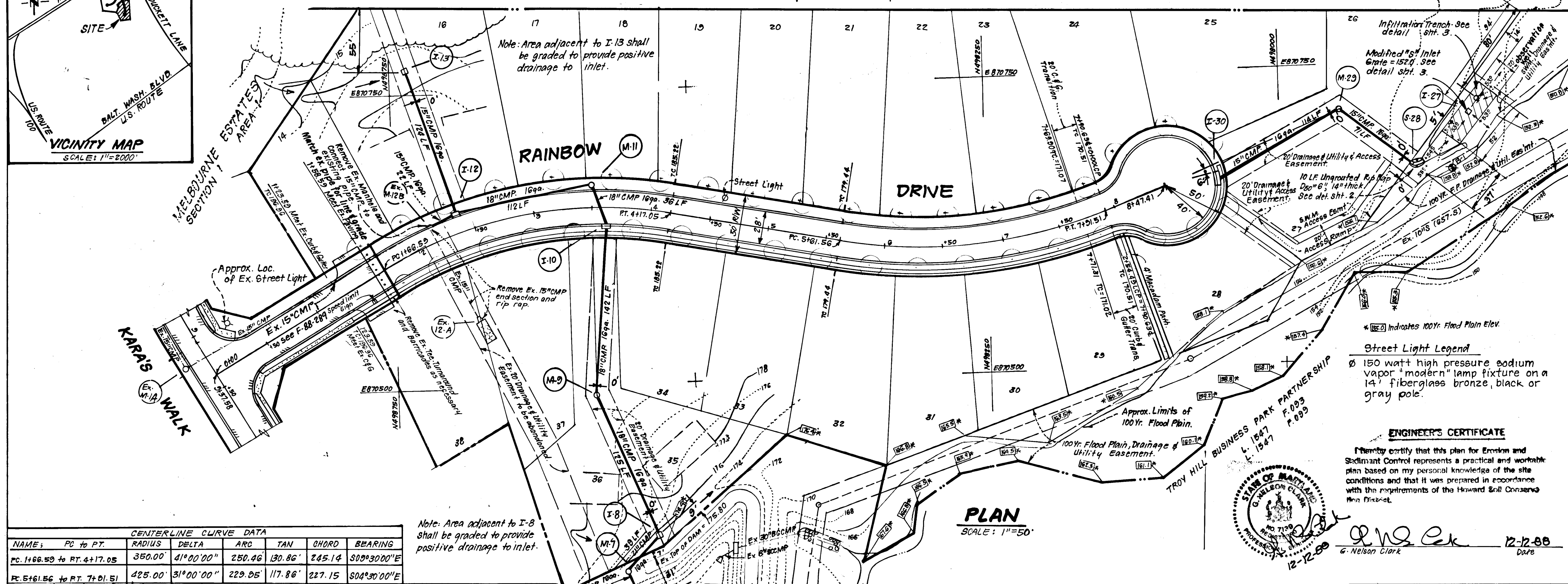
GLEN CAVE ESTATES
 SECTION 1
 PLAT 6122



PARCEL A
 PLAT 3300

GENERAL NOTES

- All storm drain & paving shall be constructed in accordance with the latest edition and specifications of Howard County's MDSA.
- Types of storm drainage refer to the standard details of No. Co. & MDSA.
- Trench compaction for storm drains within road or street right-of-way limits shall be in accordance with "No. Co. Design Manual, Vol. II," Std. G-2.01.
- Information concerning underground utilities was obtained from available records, but the Contractor must determine the exact location and elevation of mains by digging test pits, by hand, at all utility crossings, well in advance of construction.
- All utility companies shall be notified 24 hrs. in advance of construction.
- All traffic services, parking and signing to be abate in accordance with the "Manual of Uniform Traffic Control Devices," 1984, Revised Edition.
- Sign and Dress Vertical Curves were designed in accordance with "No. Co. Design Manual," Vol. II.
- Provide Conc. Sidewalk Ramps, No. Co. Std. Type A R-4.01 where shown in plan.
- Design Speed: See Sheet 2. Zoning: R-12
- The contractor or developer shall contact the Construction Inspection/Survey Division 24 hrs. in advance of commencement of work. Ph. 792-7272.
- Street lights to be placed 2'-10" behind curb and in accordance with Howard County Design Manual Vol. II.
- SWM provided for by previously approved plans F-88-289.
- Flood plain information obtained from previously approved study under P-88-73.



CENTERLINE CURVE DATA

NAME	PC to PT	RADIUS	DELTA	ARC	TAN	CHORD	BEARINGS
PC 1466.59 to PT 4+17.05		350.00	41°00'00"	250.46	130.86'	245.14	S09°30'00"E
PC 5+61.56 to PT 7+01.51		425.00	31°00'00"	229.05	117.86'	227.15	S04°30'00"E

Note: Area adjacent to I-8 shall be graded to provide positive drainage to inlet.

ENGINEER'S CERTIFICATE

I hereby certify that this plan for Erosion and Sediment Control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

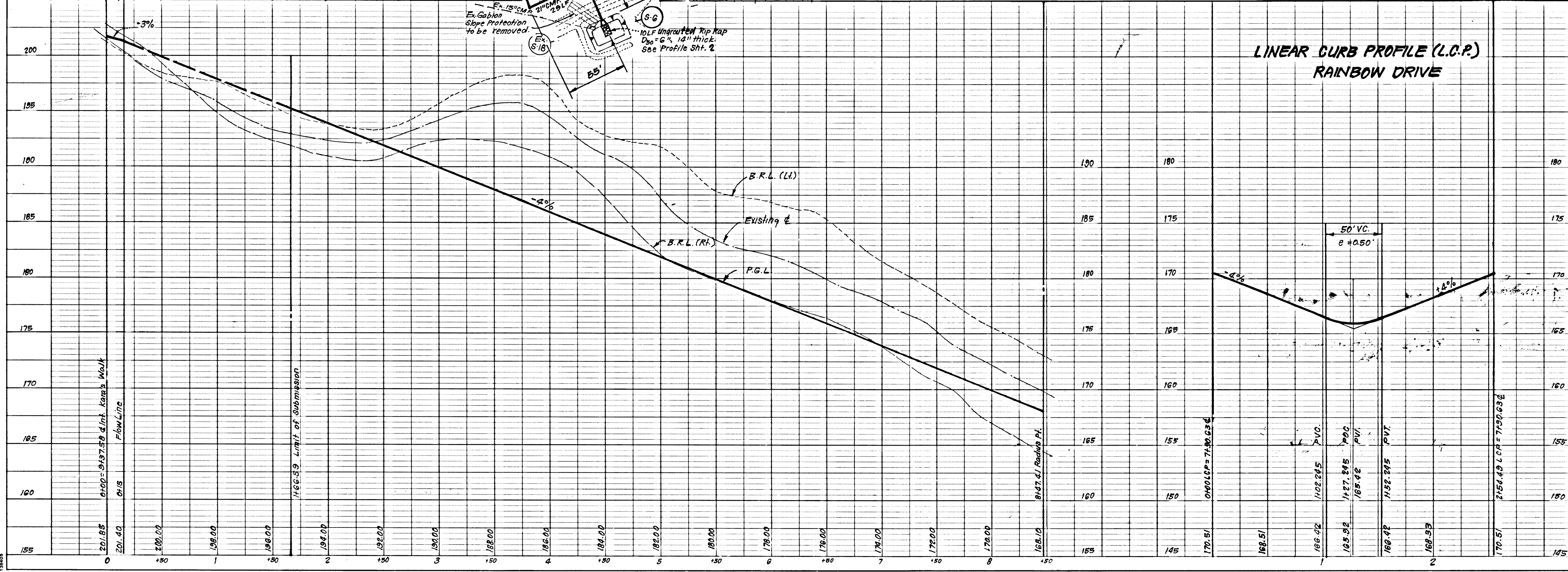


APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
 Chief, Land Development Division
 Chief, Bureau of Highways
 Chief, Bureau of Engineering

APPROVED: HOWARD COUNTY OFFICE OF PLANNING & ZONING.
 Chief, Division of Community Planning & Land Development

CLARK • FINEFROCK & SACKETT, INC.
 ENGINEERS • PLANNERS • SURVEYORS
 7135 MINSTREL WAY • COLUMBIA, MD 21045 • (301) 381-7500 - BALTO. • (301) 621-8100 - WASH.

DESIGNED	GLB	ROAD CONSTRUCTION PLANS	SCALE	As Shown
DRAWN	KIN	RAINBOW DRIVE	DRAWING	1 of 4
CHECKED	GLB	MELBOURNE ESTATES	JOB NO.	86-122
DATE	12-9-88	SECTION ONE AREA TWO	FILE NO.	86-122-D
		1ST ELECTION DISTRICT		
		HOWARD COUNTY, MARYLAND		
		FOR: The BUILDERS GUILD, INC.		
		8950 Rte. 108, Suite 104, Gorman Plaza		
		Columbia, Md. 21045		



STREET TREE TABLE

SYM	TYPE	SIZE	QUANT.	REMARKS
(C)	Acer Rubrum "October Glory"	2 1/2" CAL	38	B.B. Heavy Heads

- Notes:
- Contractor to verify location of underground utilities prior to digging.
 - Final location of trees may be adjusted slightly to accommodate field work.
 - Planting procedures shall comply with "Landscape Specs. for Baltimore Washington Metropolitan Areas."
 - Substitution of the approved species may be permitted provided that the planting is in accordance with the street tree and landscape requirements as specified in Section 10.131 of the No. Co. Subdivision Regulations.

Reviewed for: HOWARD COUNTY S.C.D.
 Name
 and meets Technical Requirements
 Signature
 U.S. Soil Conservation Service

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

Stephen L. Rubin 6/15/89
 Approved Date

DEVELOPER/BUILDER'S CERTIFICATE

"I/We certify that all development and construction will be done according to this plan of development and plan for erosion and sediment control and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Dept. of Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District or their authorized agents, as are deemed necessary."

Signature of Developer/Builder
 Date

1439

INFILTRATION NOTES

3.3.6.1. **Timing**
An infiltration trench shall not be constructed or placed in service until all of the contributing drainage areas has been stabilized and approved by the responsible inspector.

3.3.6.2. **Trench Preparation**
Excavate the trench to the design dimensions. Excavated materials shall be placed away from the trench sides to enhance trench wall stability. Large tree roots must be trimmed flush with the trench sides in order to prevent fabric puncturing or tearing during subsequent installation procedures. The side walls of the trench shall be roughened where sheared and sealed by heavy equipment.

3.3.6.3. **Fabric Laydown**
The filter fabric roll must be cut to the proper width prior to installation. The cut width must include sufficient material to conform to trench perimeter irregularities and for a 6-inch minimum top overlap. Place the fabric roll over the trench and unroll a sufficient length to allow placement of the fabric down into the trench. Stones or other anchoring objects should be placed on the fabric at the edge of the trench to keep the lined trench open during windy periods. When overlaps are required between rolls, the upstream roll should lap a minimum of 2 feet over the downstream roll in order to provide a shingled effect. The overlap ensures fabric continuity or to ensure that the fabric conforms to the excavation surface during aggregate placement and compaction.

3.3.6.4. **Stone Aggregate Placement and Compaction**
The stone aggregate should be placed in lifts and compacted using place compactors. As a rule of thumb, a maximum loose lift thickness of 12 inches is recommended. The compaction process ensures fabric conformity to the excavation sides, thereby reducing the potential for soil piping, fabric clogging, and settlement problems.

3.3.6.5. **Overlapping and Covering**
Following the stone aggregate placement, the filter fabric shall be folded over the stone aggregate to form a 6" minimum longitudinal lap. The desired fill soil or stone aggregate shall be placed over the lap at sufficient intervals to maintain the lap during subsequent backfilling.

3.3.6.6. **Contamination**
Care shall be exercised to prevent natural or fill soils from intermixing with the stone aggregate. All contaminated stone aggregate shall be removed and replaced with uncontaminated stone aggregate.

3.3.6.7. **Voids Behind Fabric**
Voids can be created between the fabric and excavation sides and shall be avoided. Removing boulders or other obstacles from the trench walls is one source of such voids. Natural soils should be placed in these voids at the most convenient time during construction to ensure fabric conformity to the excavation sides. Soil piping, fabric clogging, and possible surface subsidence will be avoided by this remedial process.

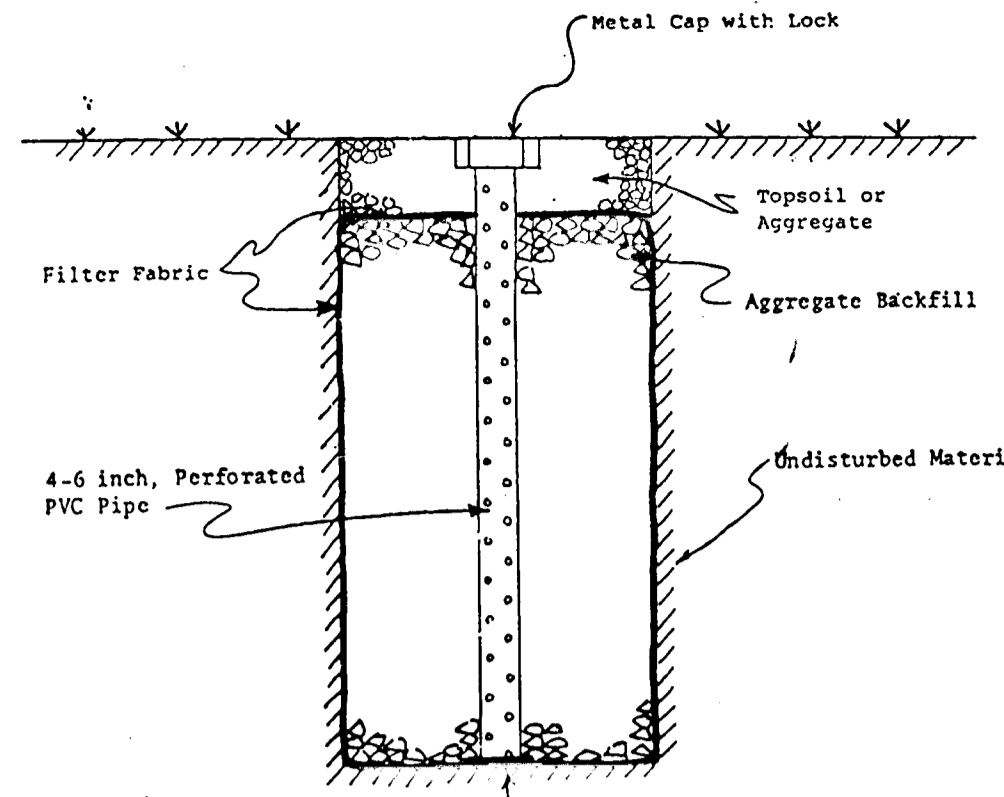
3.3.6.8. **Unstable Excavation Sides**
Vertically excavated walls may be difficult to maintain in areas where the soil moisture is high or where soft cohesive or cohesionless soils predominate. These conditions may require laying back of the side slopes to maintain stability; trapezoidal rather than rectangular cross sections may result.

3.3.6.9. **Vegetative Buffer**
A vegetative buffer of at least 20 feet (wider, if possible) shall be used to intercept surface runoff from all impervious areas.

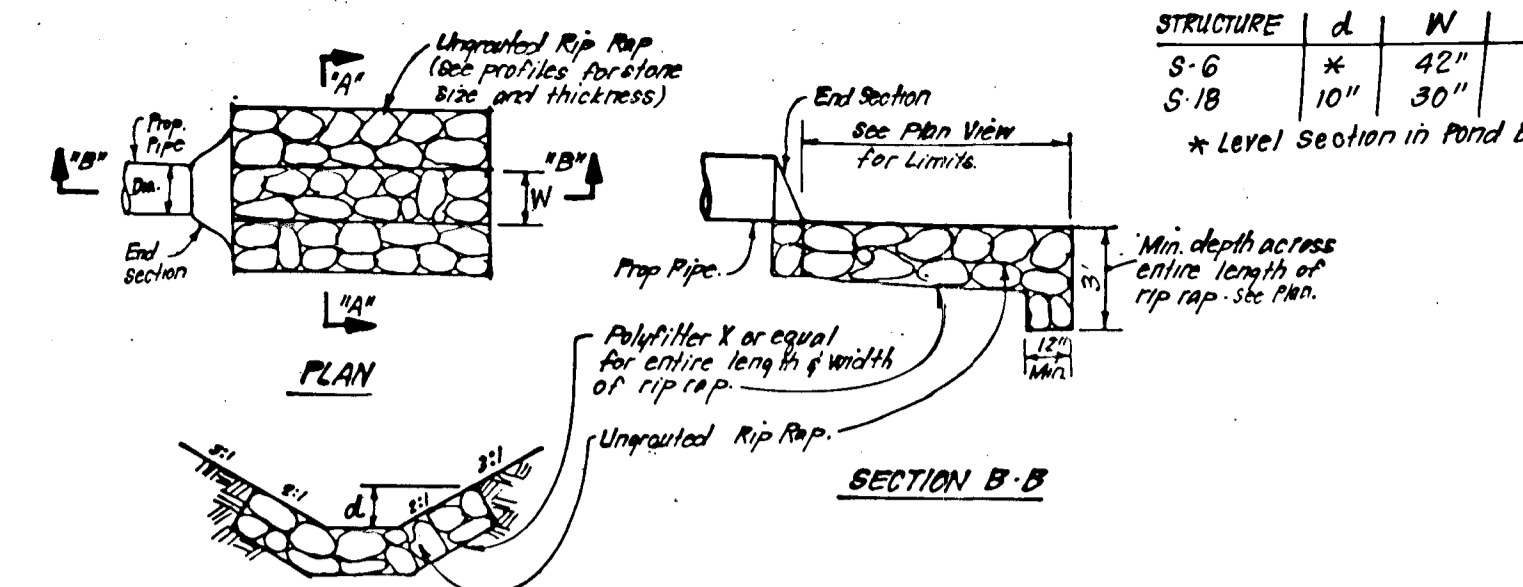
3.3.6.10. **Traffic Control**
Heavy equipment and traffic shall be restricted from traveling over the infiltration areas to minimize compaction of the soil.

3.3.6.11. **Observation Well**
An observation well, as described in subsection 3.3.4.8 and Figure 3-5 shall be provided. The depth of the well at the time of installation will be clearly marked on the well cap.

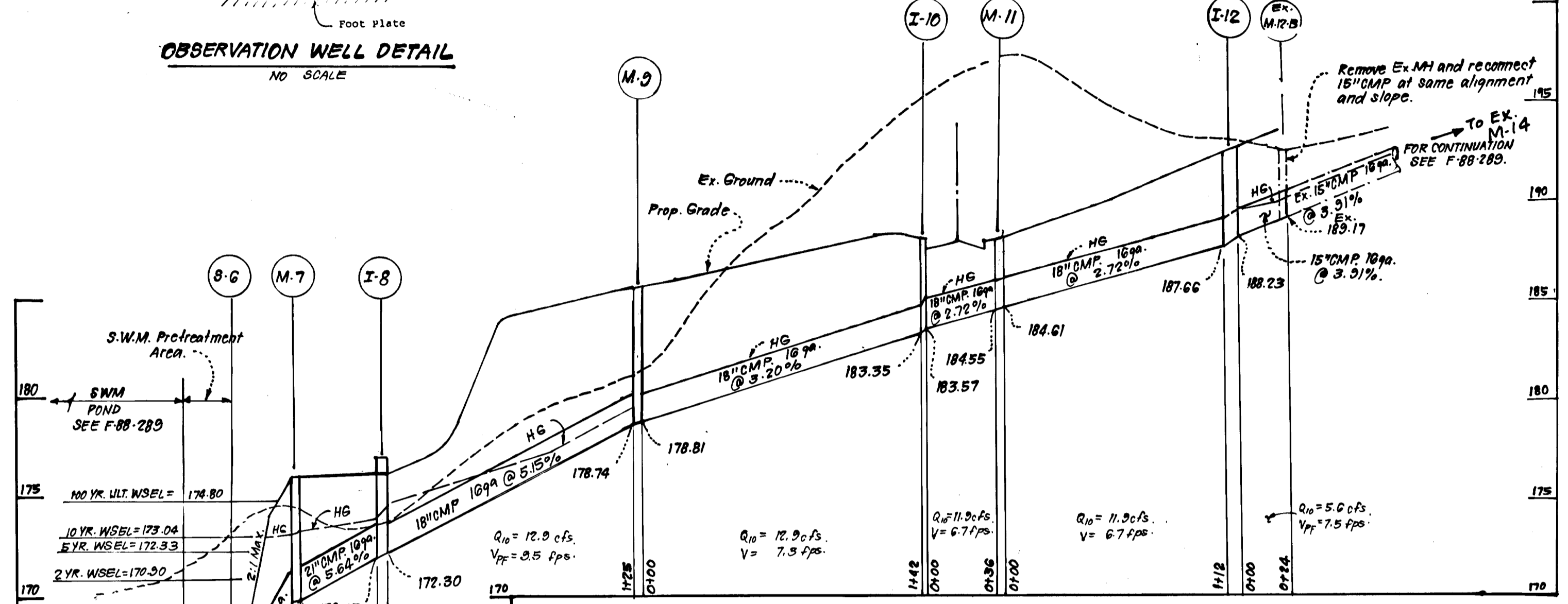
- Notes:**
- For 6" of pipe see manufacturer's specs. or field measure circumference of pipe and divide by 3.14.
 - Within road R/W, trench compaction density shall be 95% as determined A.S.H.T.O. T-100-A.
 - For conditions requiring solid sheeting or trench shields "A" shall not exceed 30'.



OBSERVATION WELL DETAIL
NO SCALE



SECTION A-A
UNGRADED RIPRAP PAVING DETAILS
NO SCALE



PROFILE
SCALE: HORIZ. 1"=50' VERT. 1"=5'

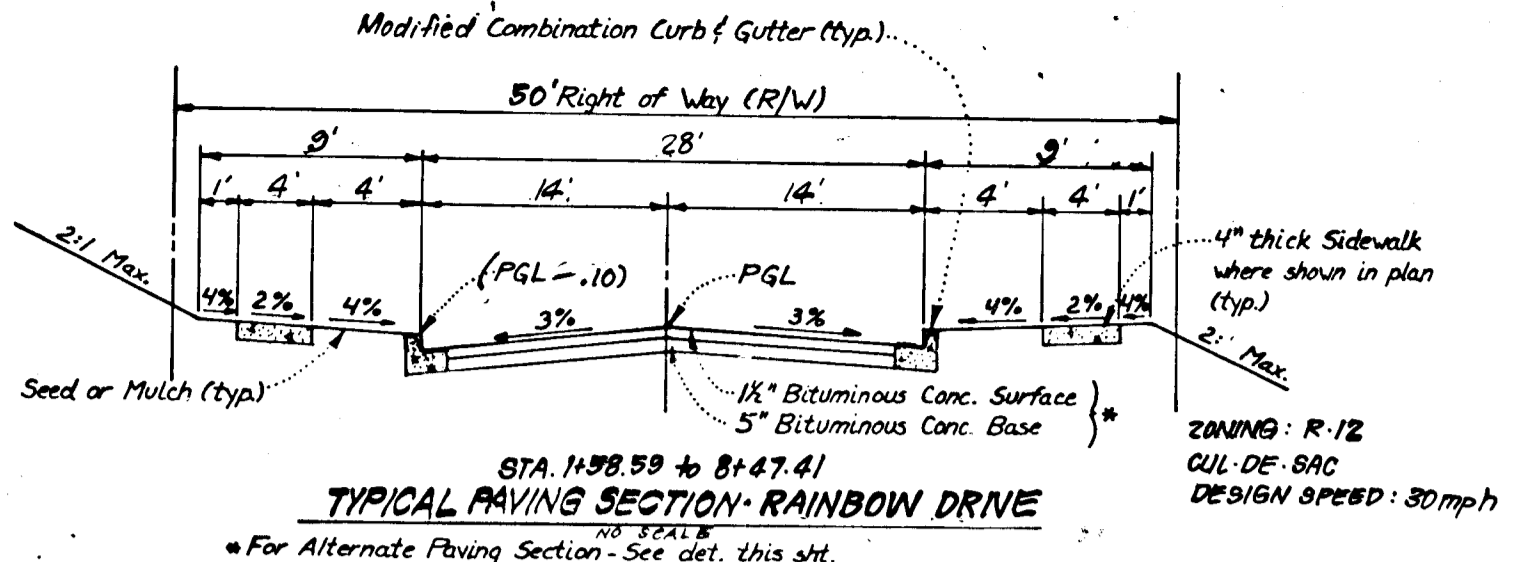
NO	TYPE	INV. IN	INV. OUT	TOP ELEVATION		REMARKS	LOCATION
				UPPER	LOWER		
S-6	Metal End Section	164.54	164.00			No. Co. Std. 40 S. 6.1 21"	Sec Plan
M-7	Brick Manhole	169.85	169.75	178.00		G 5.01 48"	"
I-8	D. Inlet	173.35	172.75	174.83		G 5.01 48"	"
M-9	Brick Manhole	178.81	178.74	185.50		G 5.01 48"	"
I-10	A-5 Inlet w/Deflectors	183.57	183.35	187.50	187.20	SD 4.01 W=2'6" 48"	Inlet 3142.22 Rainbow Dr. M-83 R/L
M-11	Shallow Brick Manhole	184.61	184.55	188.10		G 5.05 48"	MH 3149.85 Rainbow Dr. 10' L.
I-12	A-5 Inlet w/Deflectors	188.23	187.66	192.42	192.18	SD 4.01 W=3'0" 48"	Inlet 2139.89 Rainbow Dr. M-83 L/L
I-27	Modified "S" Inlet					See det. this sht.	Sec Plan
S-28	Metal End Section	154.61	154.50			No. Co. Std. SD 5.61 18"	"
M-29	Brick Manhole	157.75	157.25	165.00		G 5.01 48"	"
M-30	A-10 Inlet		162.25	165.02		SD 4.02 W=2'6" 48"	"
I-30	D. Inlet		153.15	156.73		SD 4.11	"

* Provide Slops, all sides, EL=174.0
** Provide Slops, all sides, EL=195.3
STR. NOTES: 1. For inlet deflectors, see No. Co. Std. SD 4.83.
2. See No. Co. Std. R-3.06 for curb transitions at inlets.
3. Precast structures may be substituted for brick structures in accordance with the precast substitution schedule this sht.
4. All inverts to be fully developed.

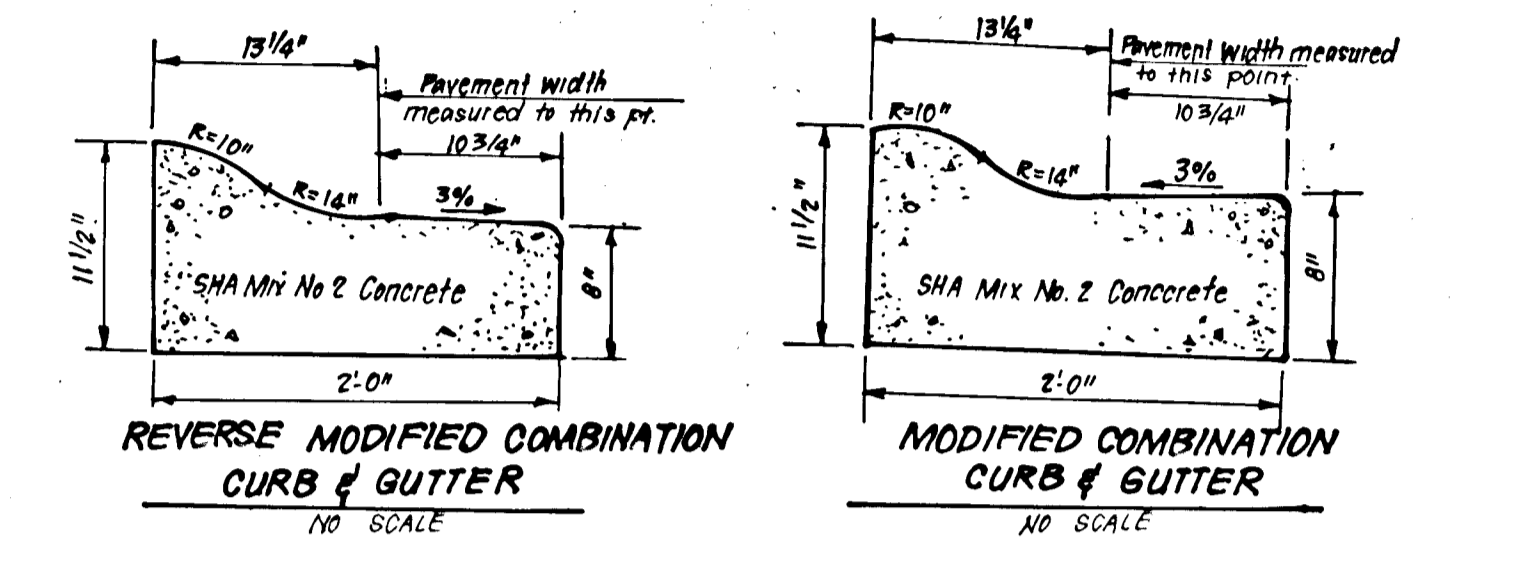
TYPE	BRICK STR. STD.	PRECAST SUBSTITUTE STD.
A-5 Inlet	SD 4.01	SD 4.40
A-10 Inlet	SD 4.02	SD 4.41
D. Inlet	SD 4.11	SD 4.37
Brick Manhole	G 5.01	G 5.11
Shallow Brick MH	G 5.05	G 5.12

SIZE	TYPE	LENGTH
15"	CMP 16ga	333 LF
18"	CMP 16ga	415 LF
21"	CMP 16ga	68 LF

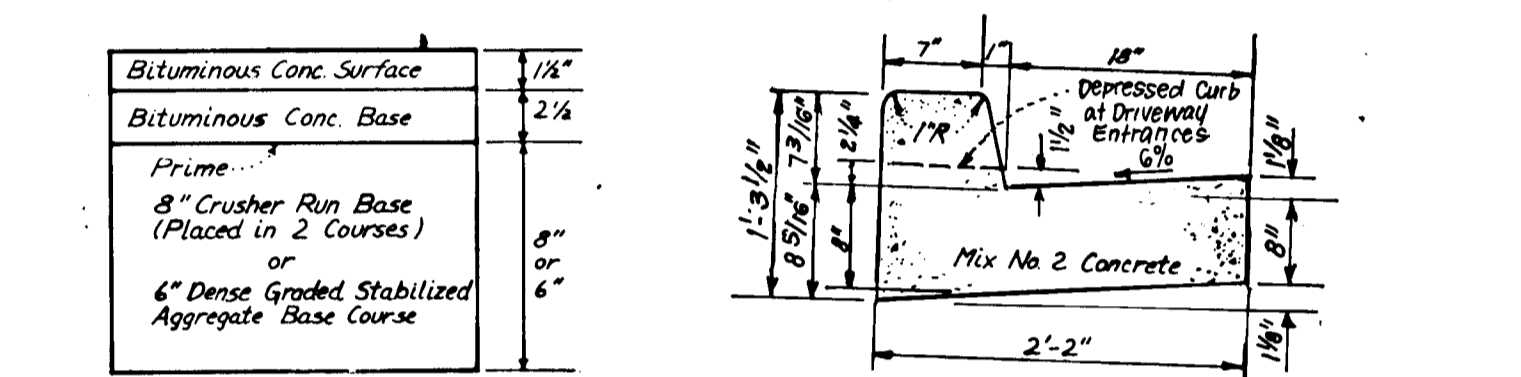
Notes: 1. CMP's to have 2 1/2" x 1/2" Helical corrugations.
2. All CSP's may be substituted for CMP's.



TYPICAL PAVING SECTION - RAINBOW DRIVE
NO SCALE
* For Alternate Paving Section - See det. this sht.

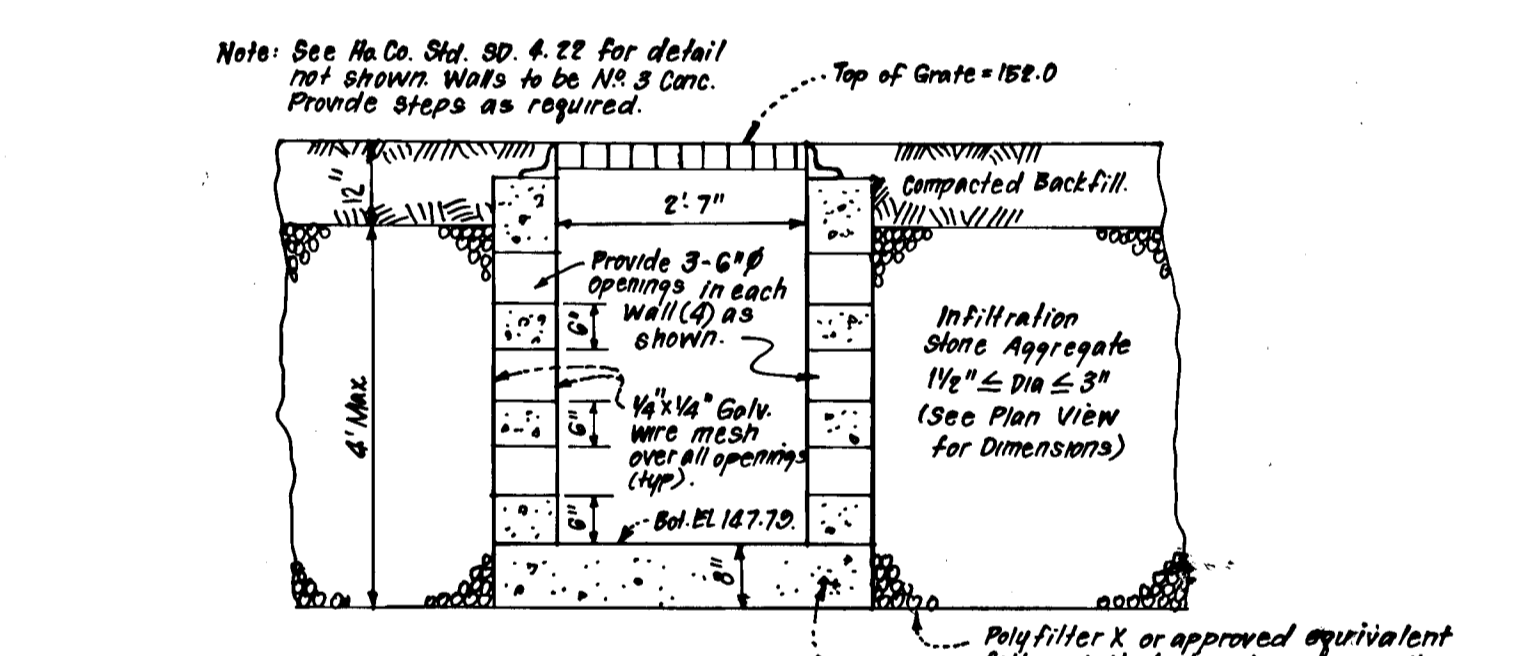


REVERSE MODIFIED COMBINATION CURB & GUTTER
MODIFIED COMBINATION CURB & GUTTER
NO SCALE

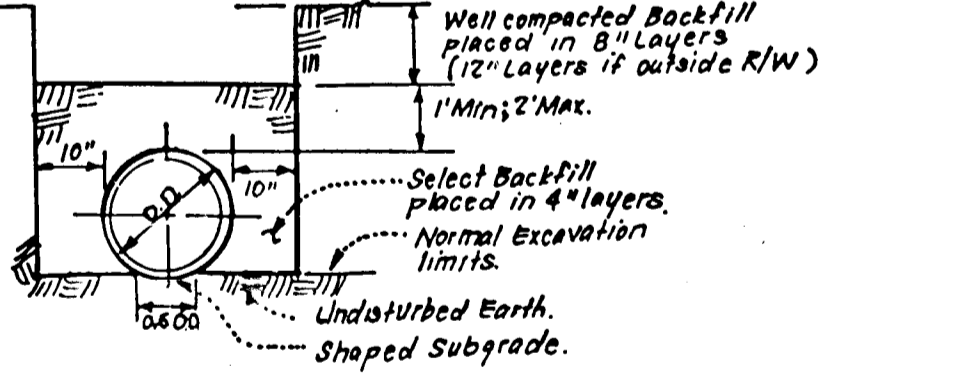


ALTERNATE PAVING SECTION FOR PUBLIC ROADS
STANDARD 7" COMBINATION CURB & GUTTER
NO SCALE

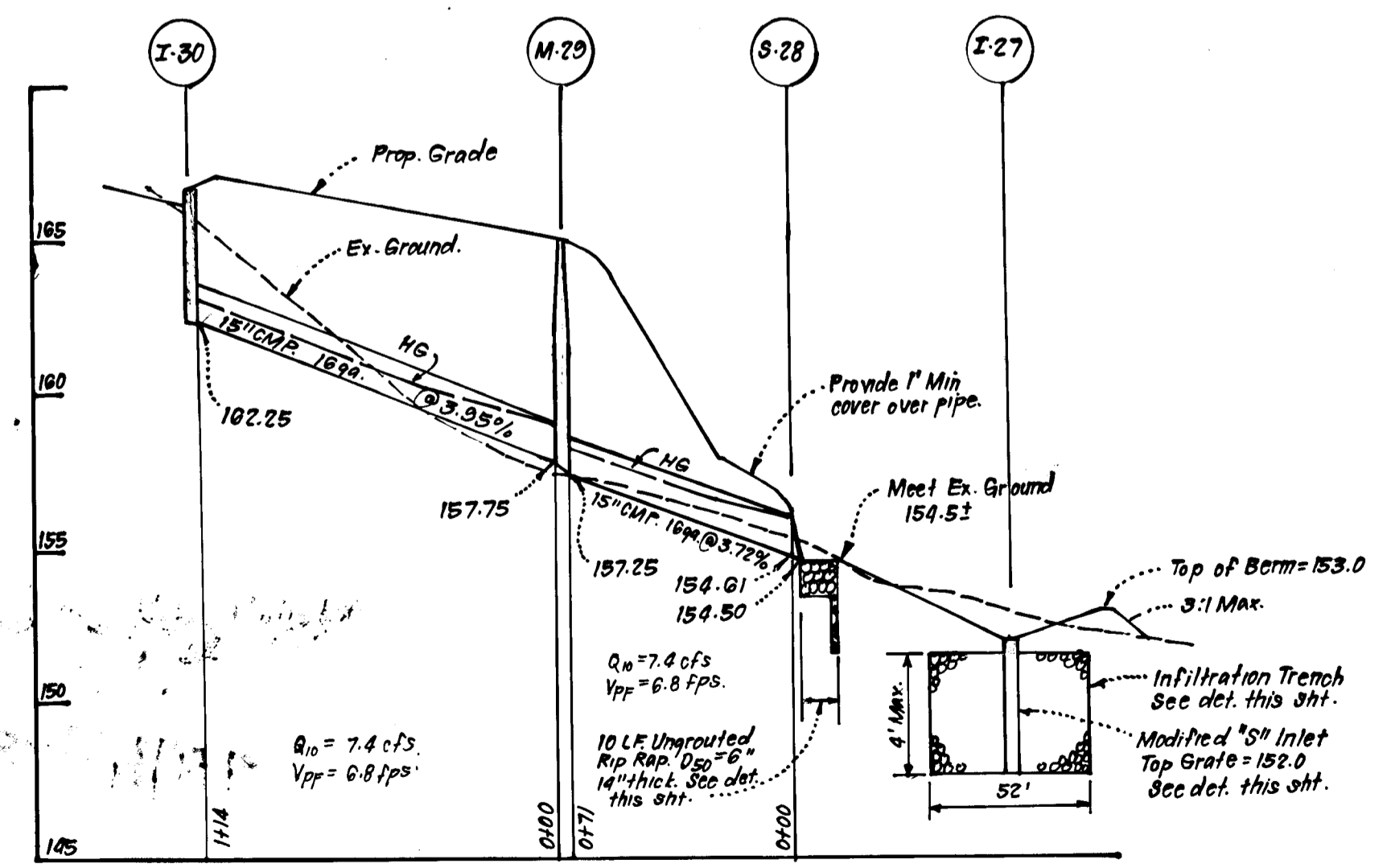
(SECTION P-2)



MODIFIED 'S' INLET DETAIL AT STR. I-27 & INFILTRATION TRENCH DETAIL
SCALE: 1"=1/2'



TRENCH COMPACTION DETAIL
NO SCALE



PROFILE
SCALE: HORIZ. 1"=50' VERT. 1"=5'

Reviewed for... **Howard**... S.C.D.
and meets Technical Requirements
James M. [Signature] 6/16/89
Signature Date
U.S. Soil Conservation Service

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
[Signature] 6/16/89
Approved

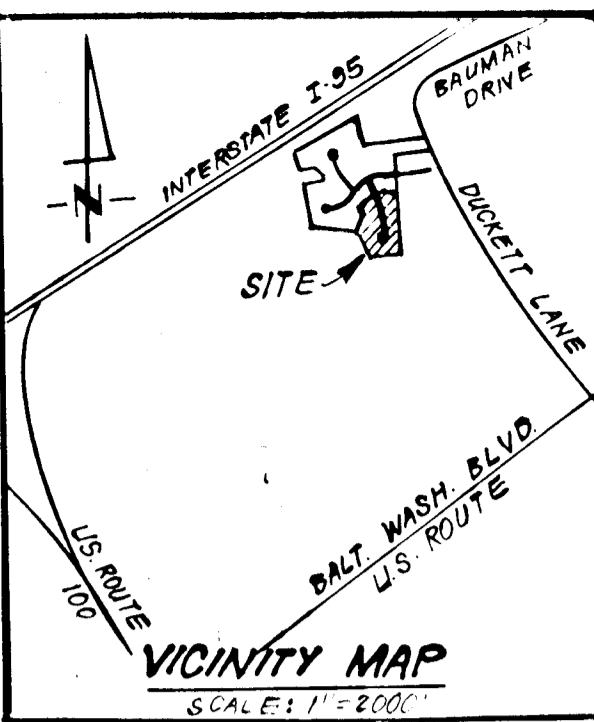
ENGINEER'S CERTIFICATE
I hereby certify that this plan for Erosion and Sediment Control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.
[Signature] 12-12-88
G. Nelson Clark Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
[Signature] 6/20/89
Date
Chief, Land Development Division
[Signature] 6/20/89
Date
Chief, Bureau of Highways
[Signature] 7-5-89
Date
Chief, Bureau of Engineering

APPROVED: HOWARD COUNTY OFFICE OF PLANNING & ZONING.
[Signature] 7/1/89
Date
Chief, Division of Community Planning & Land Development

CLARK • FINEFROCK & SACKETT, INC.
ENGINEERS • PLANNERS • SURVEYORS
7135 MINSTREL WAY • COLUMBIA, MD 21045 • (301) 381-7500 - BALTO • (301) 621-8100 - WASH.

DESIGNED	ROAD CONSTRUCTION PLANS	SCALE
GLB	STORM DRAIN, INFILTRATION AND PAVING DETAILS	As Shown
DRAWN		DRAWING
KIW	MELBOURNE ESTATES	2 OF 4
CHECKED	SECTION ONE AREA TWO	JOB NO.
GLB	1ST ELECTION DISTRICT	86-122
DATE	HOWARD COUNTY, MARYLAND	FILE NO.
12-9-88	FOR: THE BUILDERS GUILD, INC.	86-122-D
	8950 Rte. 108, Suite 114, Gorman Plaza	
	Columbia, Md. 21045	



TRAP#1 80 ST. (ST-X)
 DA = 4.9 Ac
 Storage Req'd = 4.0' (100) = 12000 cf
 Stone Crest Elev = 152.0
 Bottom Elev = 147.0
 Bottom Dimensions = See Plan
 Clean Out Elev = 149.0



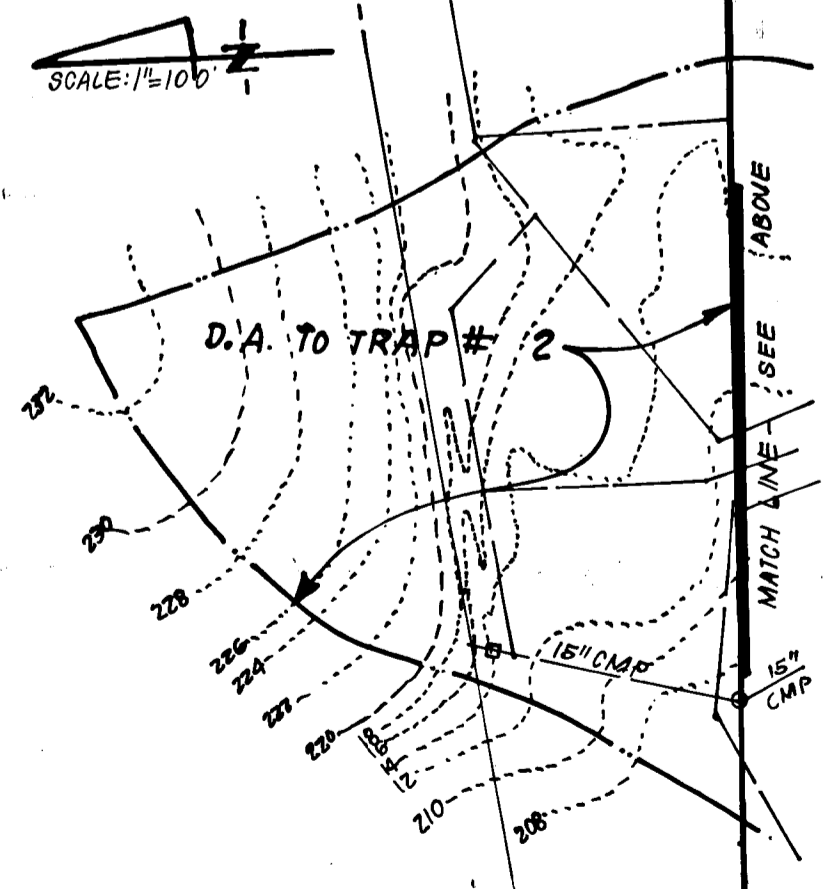
- LEGEND**
- 1. Existing Contour
 - 2. Proposed Contour
 - 3. Earth Dike
 - 4. Prop Storm Drain
 - 5. 100 Yr Flood Plain Elevation

TRAP#3 SOST. (ST-X)
 DA = 0.7 Acre
 Storage Required = 1200 cf
 Storage Provided = 1200 cf
 Storage Depth = 3'
 Stone Crest Elev = 168.0
 Bottom Elev = 164.0
 Clean Out Elev = 165.5
 Bottom Dimensions = 10'x21'

EXISTING TRAP #2 TO BE UTILIZED
 REGRADE AS SHOWN TO ALLOW
 DRAINAGE FROM TEMP. 18" CMP
 TO ENTER TRAP (SEE F-88-289)

Notes:
 Temporary Conveyance Channel from
 previously approved plans F-88-289
 to be utilized.

EXISTING SWM FACILITY
 F-88-289



Reviewed for HOWARD S.C.D.
 Name
 and meets Technical Requirements
 Signature: *James M. Harkin* 6/12/87
 Date
 U.S. Soil Conservation Service

THIS DEVELOPMENT PLAN IS APPROVED
 FOR SOIL EROSION AND SEDIMENT
 CONTROL BY THE HOWARD SOIL
 CONSERVATION DISTRICT.
 Signature: *Stephen L. Fisher* 6/11/87
 Approved Date

DEVELOPER'S/BUILDER'S CERTIFICATE

I/We certify that all development and construction will be done according to this plan of development and plan for erosion and sediment control and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Dept. of Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District or their authorized agents, as are deemed necessary.

Signature: *Richard L. ...* 12/05/88
 Date



ENGINEER'S CERTIFICATE

I hereby certify that this plan for Erosion and Sediment Control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

Signature: *G. Nelson Clark* 12-26-88
 Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
 Signature: *Dr. ...* 6/12/87
 Chief, Land Development Division

Signature: *Dr. ...* 6/12/87
 Chief, Bureau of Highways

Signature: *Dr. ...* 7-5-87
 Chief, Bureau of Engineering

APPROVED: HOWARD COUNTY OFFICE OF PLANNING & ZONING
 Signature: *Dr. ...* 7/10/87
 Chief, Division of Community Planning & Land Development

CLARK • FINEFROCK & SACKETT, INC.
 ENGINEERS • PLANNERS • SURVEYORS

DESIGNED	GLB	ROAD CONSTRUCTION PLANS BEDIMENT & EROSION CONTROL PLAN & DRAINAGE AREA MAP MELBOURNE ESTATES SECTION ONE AREA TWO 151 ELECTION DISTRICT HOWARD COUNTY, MARYLAND FOR: The BUILDERS GUILD, INC. 8950 Rte 106, Suite 104, Gorman Plaza Columbia Md 21045	SCALE
DRAWN	KIW		As Shown
CHECKED	GLB		DRAWING
DATE	12-16-88		3 OF 4
			JOB NO.
		86-122	
		FILE NO.	
		86-122-D	

F-89-105

