

TEN OAKS ROAD SEWER MAIN CAPITAL PROJECT S-6210 CONTRACT NO. 30-3770

ITEM	QUANTITIES		TYPE MATERIAL	SUPPLIER
	ESTIMATED	AS BUILT		
8" SEWER	880 LF	828	PVC	A-I PIPE, INC.
6" GRAVITY SEWER HOUSE CONNECTION	105 LF	105	PVC	A-I PIPE, INC.
MANHOLES	7 EA	7	PRECAST	ATLANTIC CONCRETE
SHALLOW MANHOLE	2 EA	2	PRECAST	ATLANTIC CONCRETE
MANHOLES-DEPTH > 6'	11 VF	13.25	N/A	N/A
DROP MANHOLES- TYPE "A"	2 EA	2	PRECAST	ATLANTIC CONCRETE
DROP MANHOLES-DEPTH > 6'	6 VF	7.30	N/A	N/A
2" PRESSURE SEWER	550 LF	540	PVC	
36" O.D. CASING WITH 8" SEWER	80 LF	80	STEEL	HORIZONTAL ROAD BORING AND TUNNELING
2" PRESSURE SEWER HOUSE CONNECTION	120 LF	140	PVC	
2" BALL VALVE & VALVE BOX	5 EA	6	BRASS	MUELLER
1" WATER HOUSE CONNECTION	100 LF	100	TYPE "K" COPPER TUBE	READING TUBE CORP.
3/4" WATER METER SETTING	1 EA	0		

NOTE:
SEDIMENT CONTROL TO BE IMPLEMENTED IN ACCORDANCE WITH VOLUME 4, ARTICLE 15 OF THE HOWARD COUNTY DESIGN MANUAL AND THESE PLANS.

ENGINEER'S CERTIFICATION

I 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 HOWARD COUNTY SOIL CONSERVATION DISTRICT.

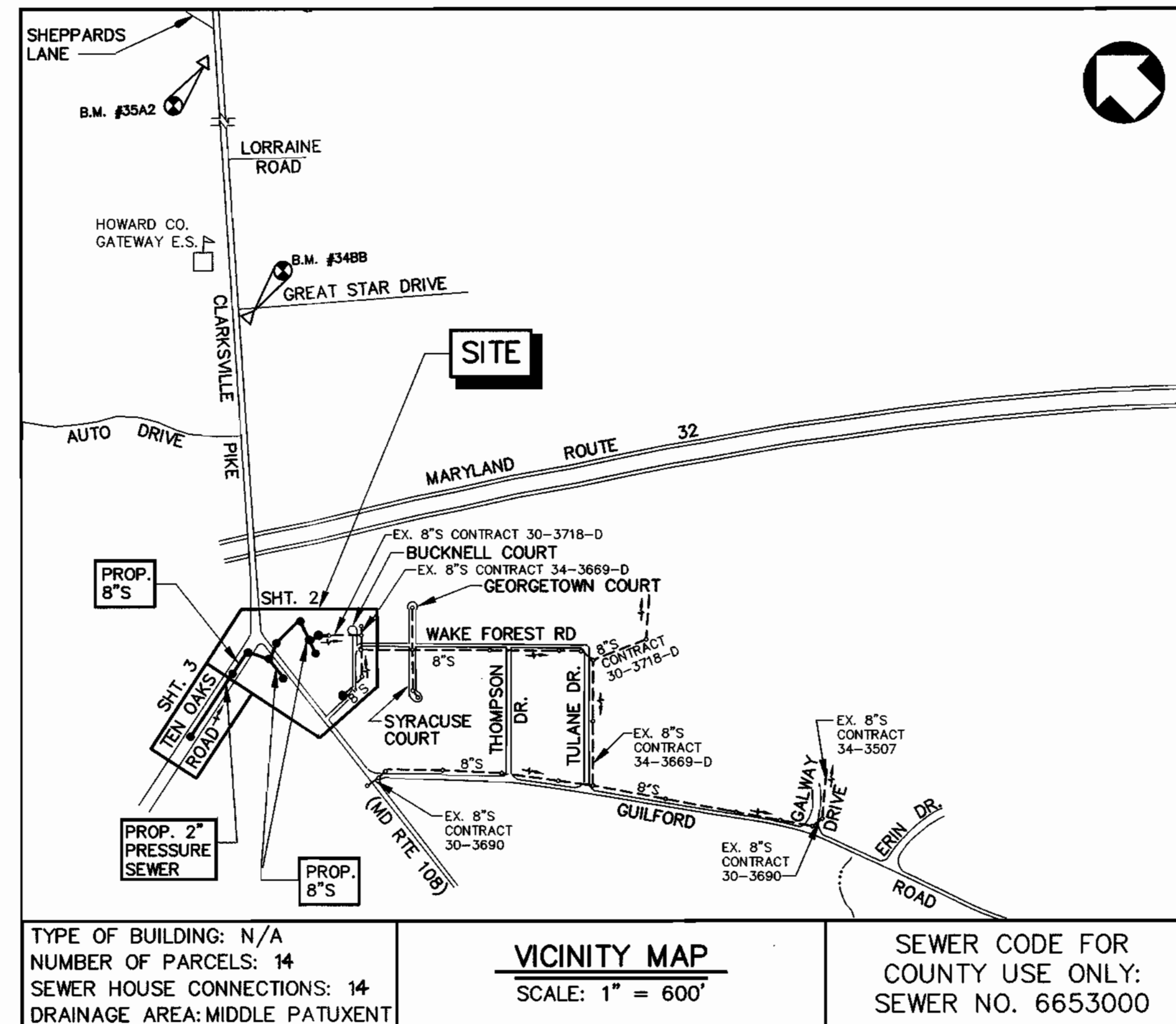
James J. Smith DATE: 10-27-99
WALLACE, MONTGOMERY & ASSOCIATES
110 WEST ROAD - SUITE 345
TOWSON, MARYLAND 21204
(410) 494-9093

REVIEWED FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS.

J.G. Wainwright 11/1/01
U.S.D.A. - NATURAL RESOURCES CONSERVATION SERVICE DATE

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

John H. Deery 11/1/01
APPROVED DATE
HOWARD SOIL CONSERVATION DISTRICT



GENERAL NOTES:

- APPROXIMATE LOCATIONS OF EXISTING MAINS ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS, SERVICE AND MAINTAIN UNINTERRUPTED SUPPLY. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
- ALL HORIZONTAL CONTROLS BASED ON MARYLAND STATE COORDINATES. (NAD 83)
- ALL VERTICAL CONTROLS BASED ON U.S.G.S. DATUM. (NAVD 29)
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
- CLEAR ALL UTILITIES BY A MINIMUM OF 6".
- FOR DETAILS NOT SHOWN ON THE DRAWINGS, AND FOR MATERIALS AND CONSTRUCTION METHODS USE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD SPECIFICATIONS, AND DETAILS FOR CONSTRUCTION. THE CONTRACTOR SHALL HAVE A COPY OF VOLUME IV ON THE JOB.
- WHERE TEST PITS ARE TO BE MADE ON EXISTING UTILITIES, THEY ARE NOTED BY THE SYMBOL [Symbol] AT THE LOCATION OF THE TEST PIT. A NOTE OR NOTES CONTAINING THE RESULTS OF THE TEST PIT OR PITS IS INCLUDED ON THE DRAWINGS. EXISTING UTILITIES IN THE VICINITY OF THE PROPOSED WORK FOR WHICH TEST PITS HAVE NOT BEEN DUG SHALL BE VERIFIED BY THE CONTRACTOR TO HIS OWN SATISFACTION. ANY DAMAGE TO EXISTING FACILITIES DUE TO THE CONTRACTOR'S NEGLIGENCE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:
HOWARD COUNTY BUREAU OF UTILITIES 410-313-4900
HOWARD COUNTY CONSTRUCTION INSPECTION DIVISION 410-313-1880
BGE 1-800-685-0123
BELL ATLANTIC 1-800-446-5266
STATE HIGHWAY ADMINISTRATION 410-531-5533
MISS UTILITY 1-800-257-7777
- TREE AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO MAXIMUM EXTENT. TREES AND SHRUBS LOCATED WITHIN THE CONSTRUCTION STRIP ARE NOT TO BE REMOVED OR DAMAGED BY THE CONTRACTOR.
- CONTRACTOR SHALL REMOVE TREES, STUMPS AND ROOTS ALONG LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONSTRUCTION OF THE MAIN.
- ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER, UNLESS OTHERWISE NOTED.
- THE CONTRACTOR SHALL PROVIDE A JOINT IN ALL SEWER MAINS WITHIN 2'-0" OF EXTERIOR MANHOLE WALL.
- GRAVITY SEWER MAIN SHALL BE D.I.P. OR PVC UNLESS OTHERWISE NOTED.
- HOUSES WITH THE SYMBOL "C.N.S" INDICATES THAT THE CELLAR CAN NOT BE SERVED.
- PRESSURE SEWER AND PRESSURE SEWER HOUSE CONNECTIONS SHALL BE SDR 21 PVC.
- DESIGN OF THE LOW PRESSURE SEWER IS BASED ON THE USE OF THE ENVIRONMENTAL ONE PROGRESSIVE CAVITY PUMP.
- 2" FORCE MAIN SHALL BE PUSH-ON JOINT SDR 21 PVC PIPE.

DEVELOPER'S CERTIFICATION

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT."

Robert J. Berman 10/27/99
SIGNATURE OF DEVELOPER DATE
PRINT NAME BELOW SIGNATURE

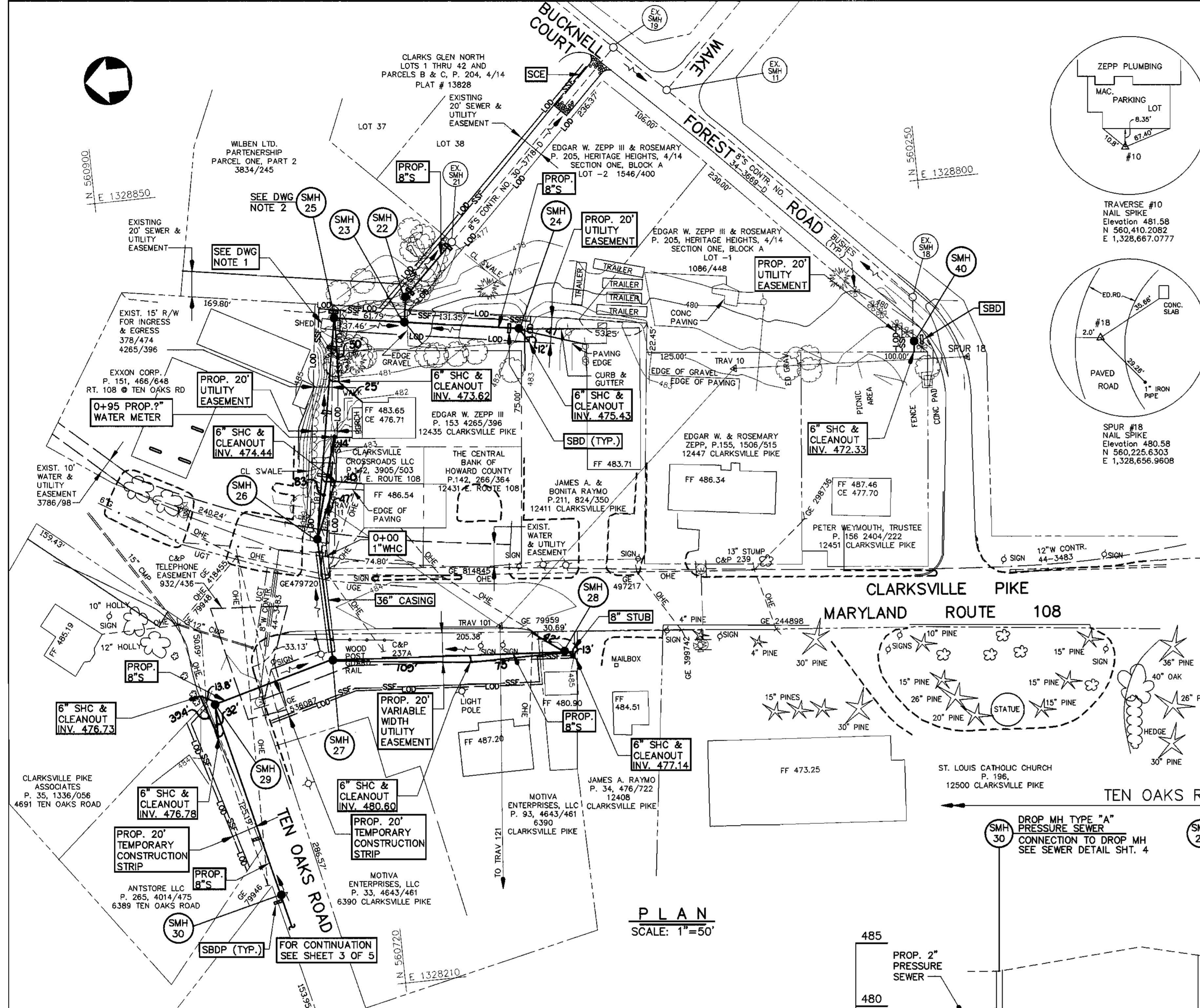
INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	PLAN AND PROFILE
3	PLAN AND PROFILE
4	SEWER DETAILS
5	TRAFFIC CONTROL PLAN & SEDIMENT CONTROL DETAILS
6	SEDIMENT CONTROL NOTES & DETAILS

BENCHMARKS				
NO.	ELEV.	NORTHING	EASTING	PRESCRIPTION
348B	485.27	562,176.441	1,329,641.893	STANDARD CONCRETE MONUMENT ON EAST SIDE OF RTE. 108, 1.3' EAST OF EDGE OF PAVEMENT, 112' NORTH OF BGE POLE NO. 531728.
35A2	488.64	564,154.800	1,331,201.112	STANDARD CONCRETE MONUMENT ON WEST SIDE OF RTE. 108, 2.8' WEST OF EDGE OF PAVEMENT, 47.2' NORTH OF BGE POLE #370902.

SEWER AS-BUILTS

<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND</p> <p><i>James J. Smith</i> 10/27/99 DIRECTOR OF PUBLIC WORKS DATE</p> <p><i>Robert J. Berman</i> 10/27/99 CHIEF, BUREAU OF UTILITIES DATE</p>	<p>WALLACE, MONTGOMERY & ASSOCIATES CIVIL AND STRUCTURAL ENGINEERS 110 WEST ROAD TOWSON, MARYLAND 21204</p> <p><i>James J. Smith</i> 10-27-99 DATE</p>	<p>DES: LAF DRN: KJP CHK: JJS DATE: OCT. 1999</p>	<p>BY NO. REVISION DATE</p>	<p>TITLE SHEET</p> <p>600' SCALE MAP NO. S 34 & 35 BLOCK NO. 12 & 18</p>	<p>TEN OAKS ROAD SEWER MAIN CAPITAL PROJECT S-6210 PHASE II CONTRACT NO. 30-3770 ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND</p>	<p>SCALE AS SHOWN</p> <p>SHEET 1 OF 6</p>
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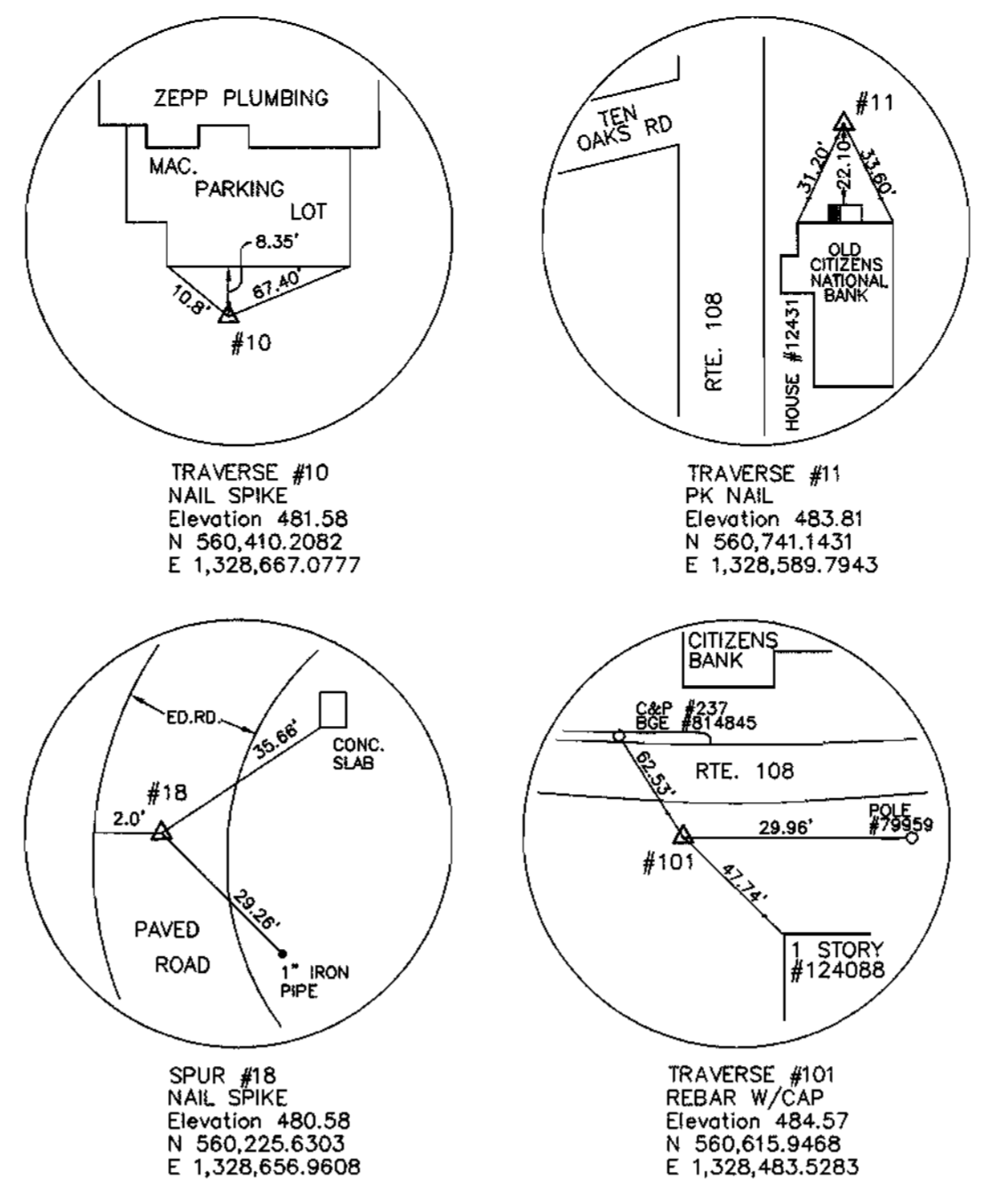
EP-0003



PLAN
SCALE: 1"=50'

STRUCTURE	NORTH	EAST
22	560,663.1857	1,328,750.6689
23	560,666.0159	1,328,730.8647
24	560,576.3242	1,328,716.4102
25	560,721.1322	1,328,740.0508
26	560,752.5385	1,328,567.1345
27	560,750.4472	1,328,470.6241
28	560,567.2380	1,328,458.4084
29	560,846.8995	1,328,445.2504
30	560,810.5476	1,328,289.8649
31	560,811.7396	1,328,289.8721
40	560,266.2400	1,328,673.5977
41	560,362.7159	1,328,686.4655

SEDIMENT CONTROL LEGEND	
LOD	LIMIT OF DISTURBANCE
SBD	STRAW BALE DIKE CHECK DAM
SBDP	STRAW BALE DIKE CHECK DAM ADJACENT TO PAVED AREAS
SSF	SUPER SILT FENCE

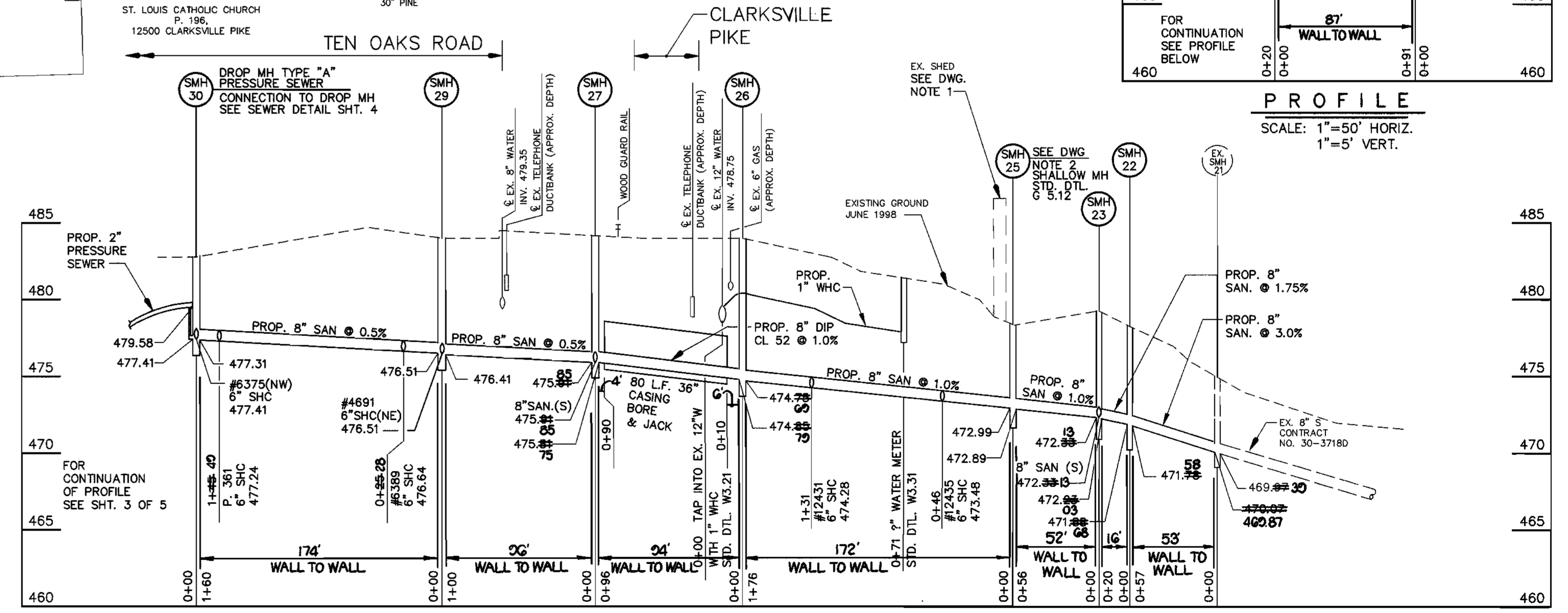


CASING DETAIL
NOT TO SCALE

- NOTES:**
1. PROVIDE BRICK BULKHEAD AND JOINT AT END OF CASING AS SHOWN ON HOWARD CO. STD. DETAIL G 9.01.
 2. 36" MIN. STEEL CASING PIPE, 3/8" MIN. WALL THICKNESS, A.W.W.A. C-200 WITH COAL TAR ENAMEL COATING, A.W.W.A. C-203 OR C-210. JOINTS TO BE WELDED FULL CIRCUMFERENCE.
 3. FILL ANNULAR SPACE WITH FLO-ASH, CONTRACTOR SHALL PROVIDE CASING SPACERS TO PREVENT FLOTATION OF 8" SEWER WHILE FILLING THE ANNULAR SPACE WITH FLO-ASH. PROVIDE DRAINS THROUGH BRICK BULKHEAD WHILE FILLING WITH FLO-ASH TO PREVENT POCKETS OF WATER IN CASING.

DRAWING NOTES:

1. RELOCATE EXISTING SHED. PROVIDE A NEW 4" THICK CONCRETE SLAB ON GRADE WITH 6"x6" W2.9xW2.9 WWF AND 4" GRAVEL SUBBASE. COORDINATE NEW LOCATION WITH THE PROPERTY OWNER.
2. PROVIDE EROSION CONTROL MATTING FOR DISTURBED GROUND IN SUMP AREAS SURROUNDING AND ADJACENT TO PROPOSED SMH 25.



8" GRAVITY SEWER PROFILE

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

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

John P. ... 4-23-01
DIRECTOR OF PUBLIC WORKS

Paul ... 4/18/01
CHIEF, BUREAU OF ENGINEERING

... 1-18-01
CHIEF, WATER & SEWER DIVISION

WALLACE, MONTGOMERY & ASSOCIATES
CIVIL AND STRUCTURAL ENGINEERS
110 WEST ROAD
TOWSON, MARYLAND 21204

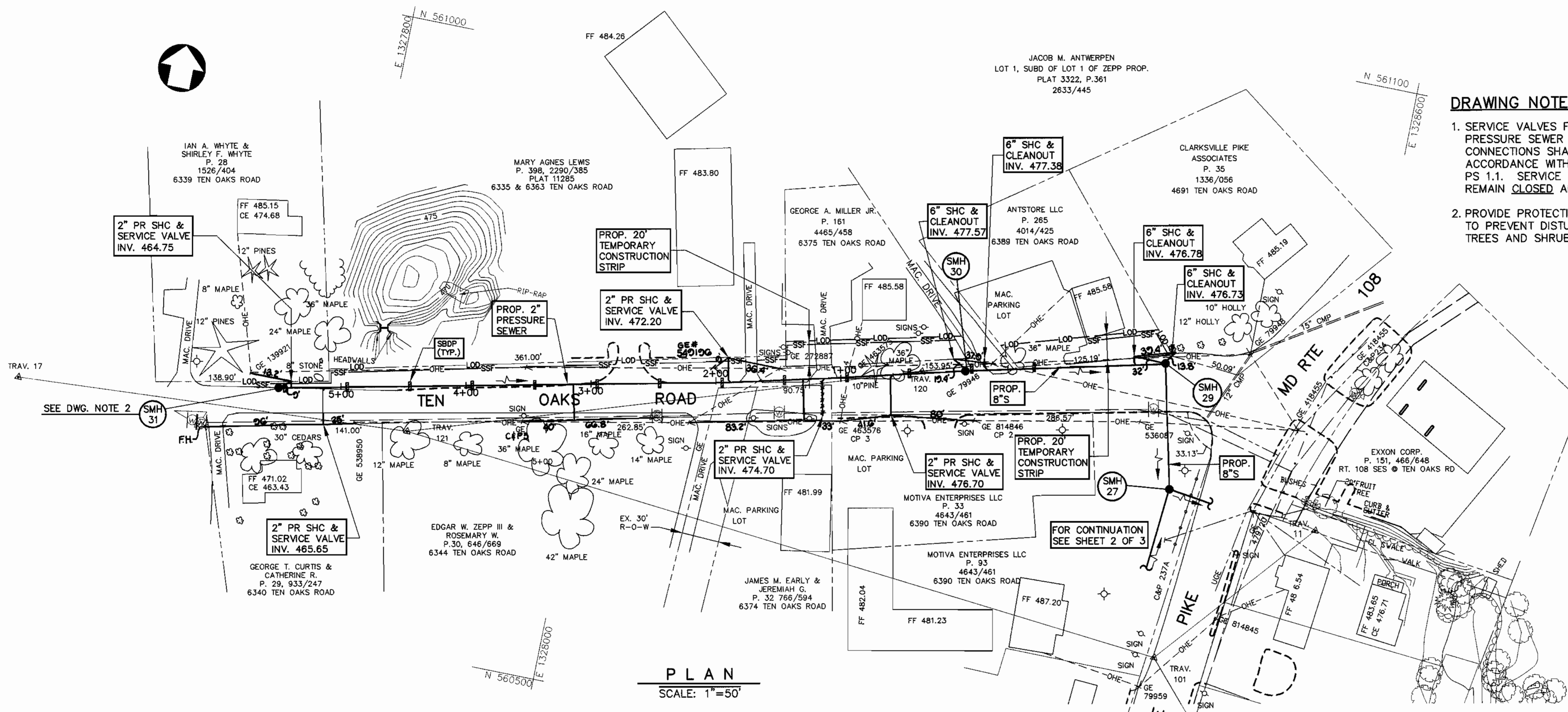


DES: LAF					
DRN: KJP					
CHK: JJS					
DATE: DEC. 2000	BY: NO.	REVISION	DATE	600' SCALE MAP NO. S_34 & 35 BLOCK NO. 12 & 18	

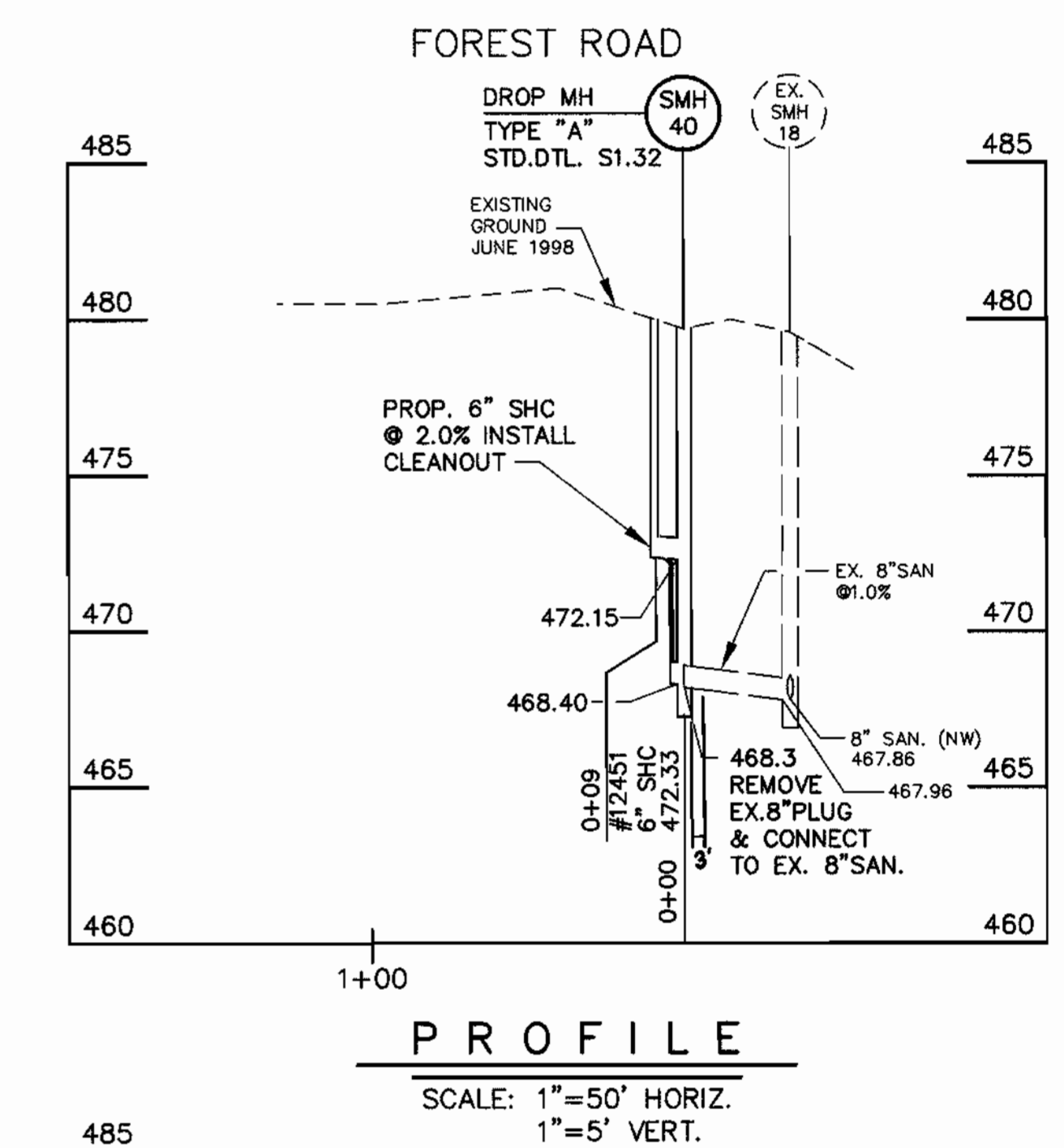
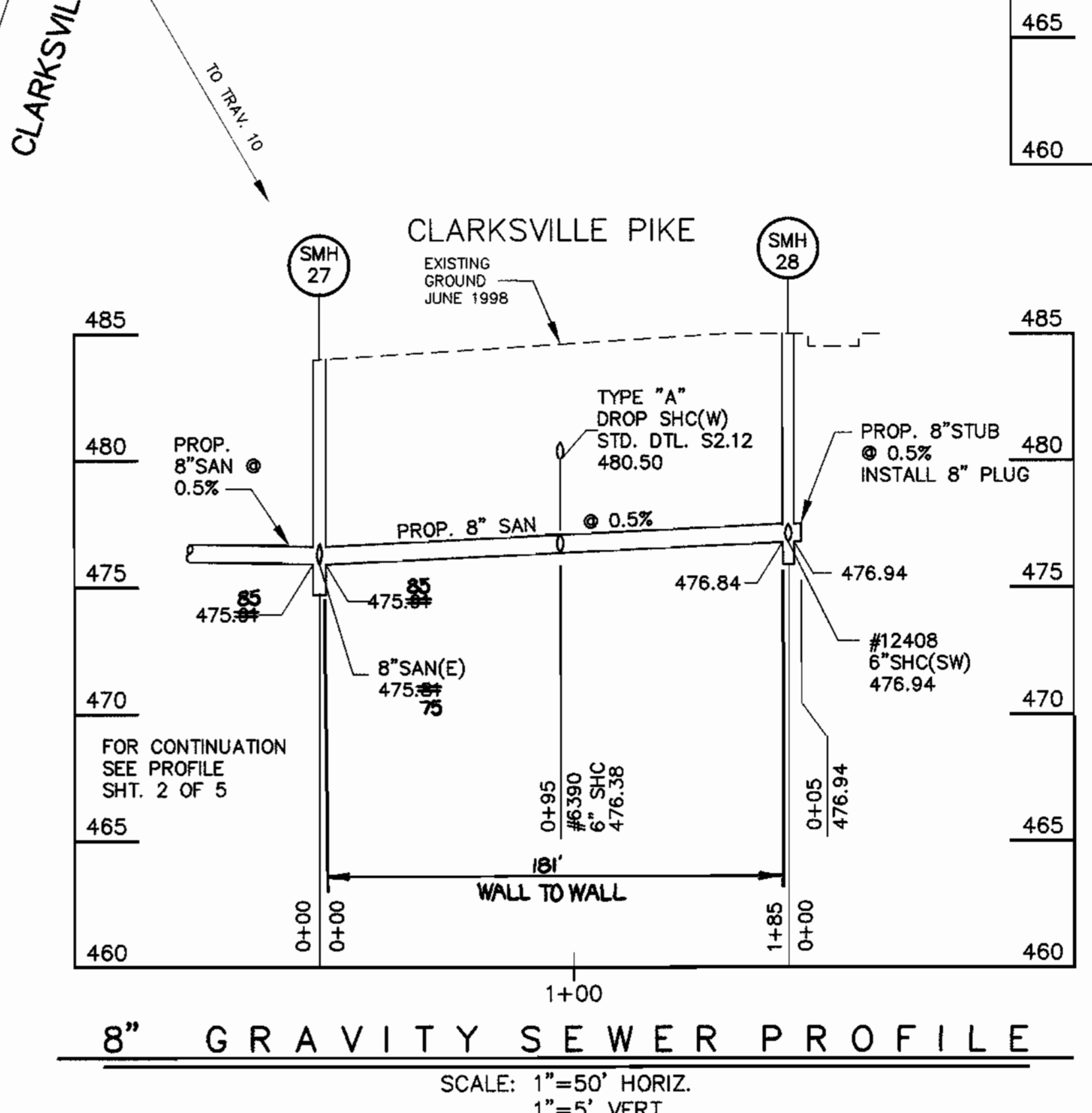
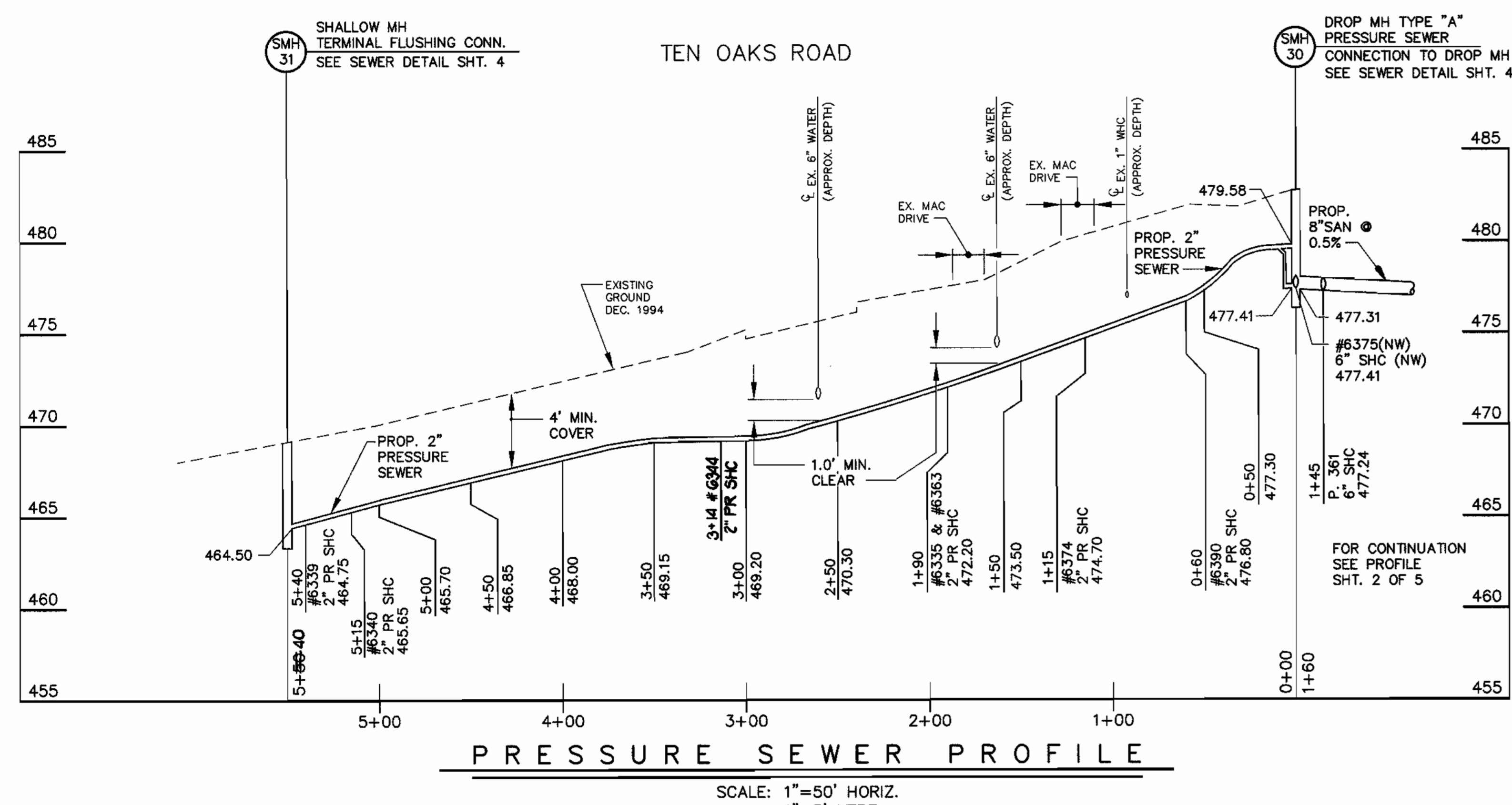
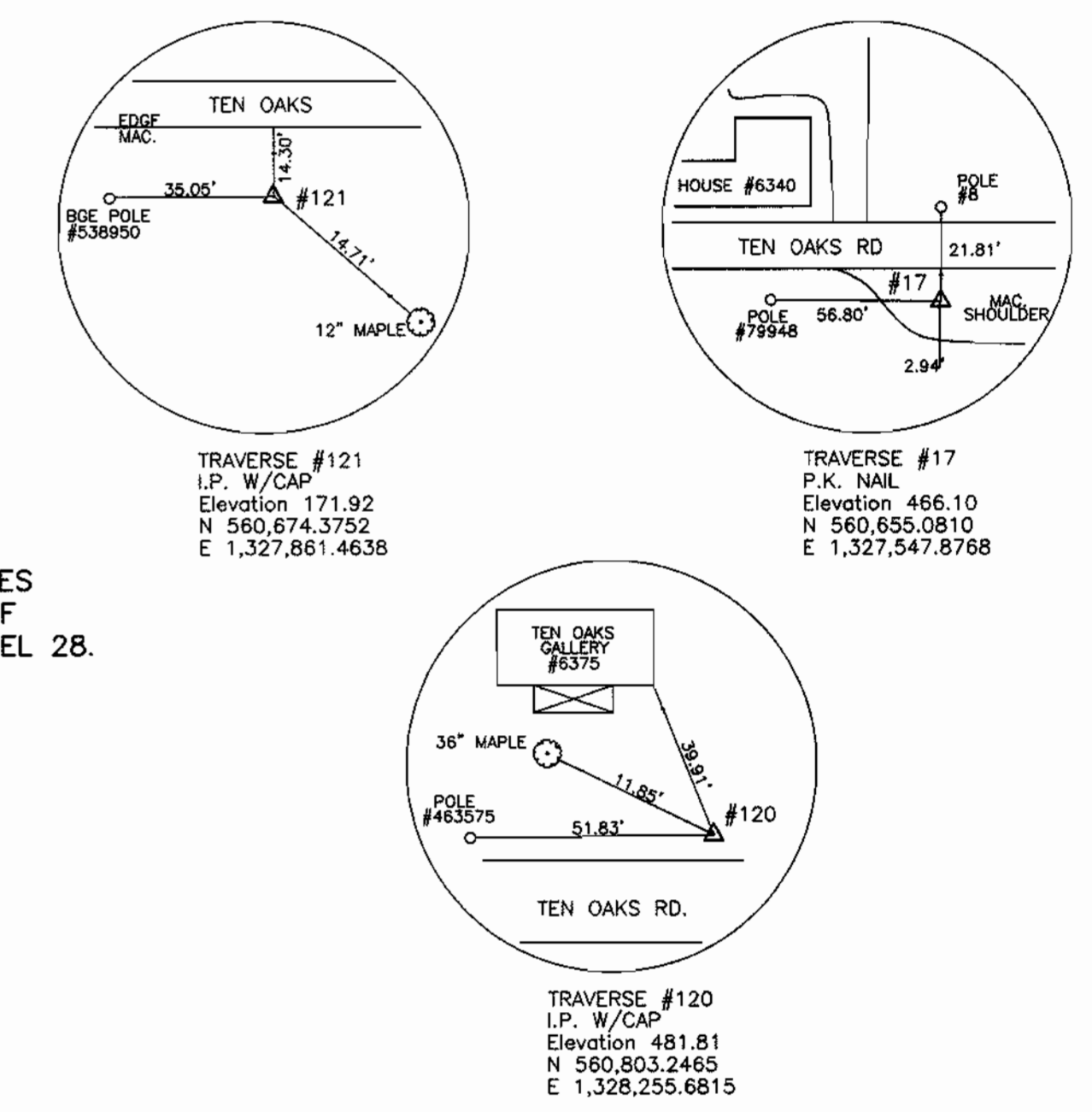
PLAN AND PROFILE

TEN OAKS ROAD SEWER MAIN
CAPITAL PROJECT S-6210 PHASE II
CONTRACT NO. 30-3770
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 2 OF 6



- DRAWING NOTES:**
- SERVICE VALVES FOR PRESSURE SEWER HOUSE CONNECTIONS SHALL BE IN ACCORDANCE WITH DETAIL PS 1.1. SERVICE VALVES TO REMAIN CLOSED AND CAPPED.
 - PROVIDE PROTECTION MEASURES TO PREVENT DISTURBANCE OF TREES AND SHRUBS ON PARCEL 28.



SEDIMENT CONTROL LEGEND

LOD	LIMIT OF DISTURBANCE
SBD	STRAW BALE DIKE CHECK DAM
SBDP	STRAW BALE DIKE CHECK DAM ADJACENT TO PAVED AREAS
SSF	SUPER SILT FENCE

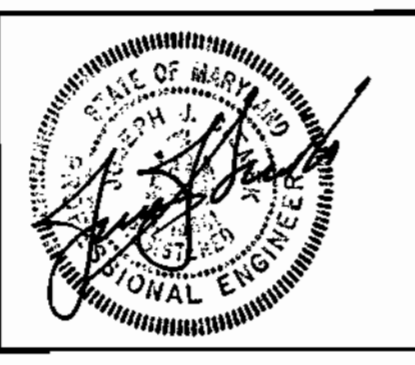
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[Signature] 4/24/01
DIRECTOR OF PUBLIC WORKS DATE

[Signature] 4-23-01
CHIEF, BUREAU OF UTILITIES DATE

[Signature] 9/18/01
CHIEF, WATER & SEWER DIVISION DATE

WALLACE, MONTGOMERY & ASSOCIATES
CIVIL AND STRUCTURAL ENGINEERS
110 WEST ROAD
TOWSON, MARYLAND 21204



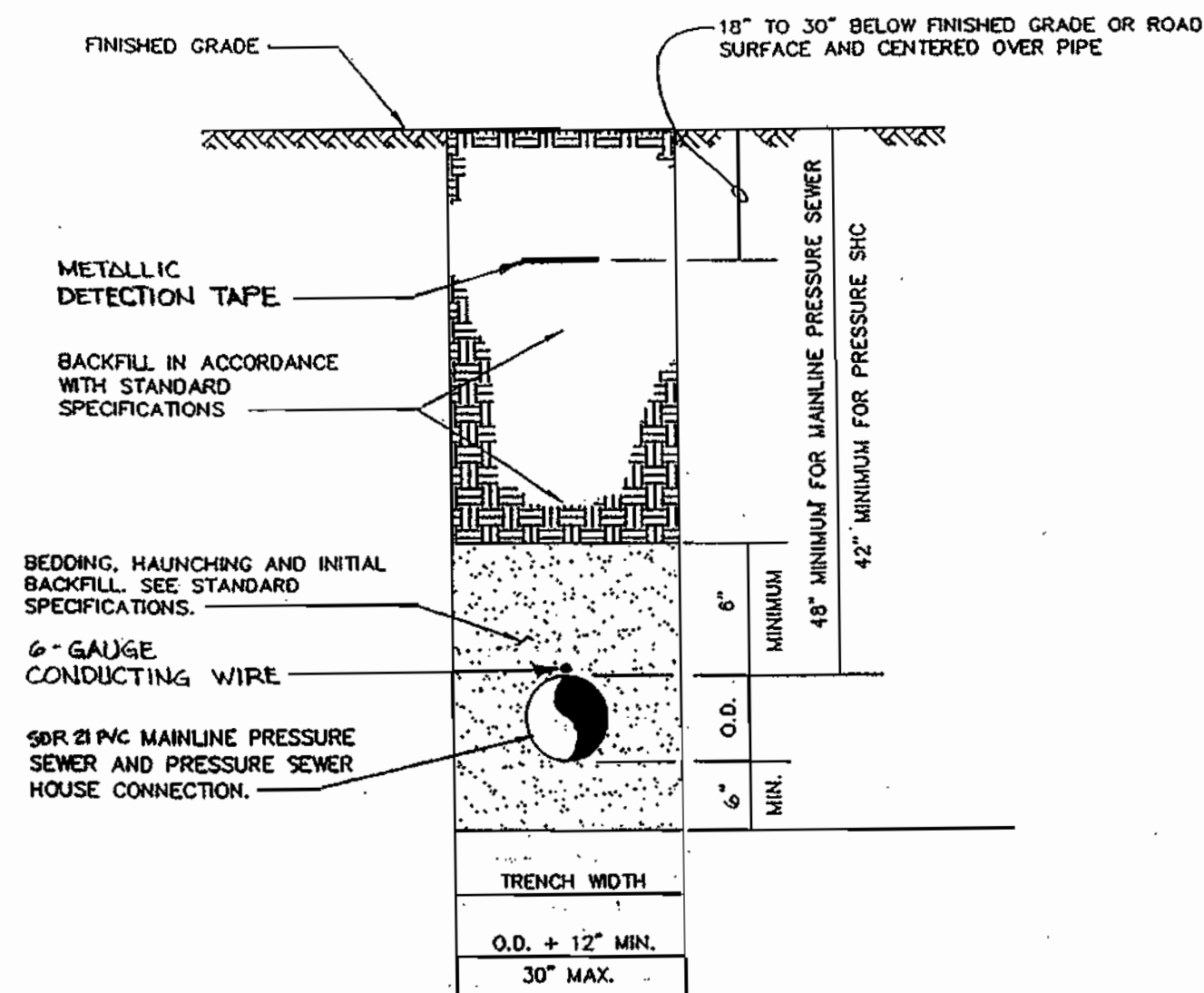
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PLAN AND PROFILE

600' SCALE MAP NO. S 34 & 35 BLOCK NO. 12 & 18

TEN OAKS ROAD SEWER MAIN
CAPITAL PROJECT S-6210 PHASE II
CONTRACT NO. 30-3770
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

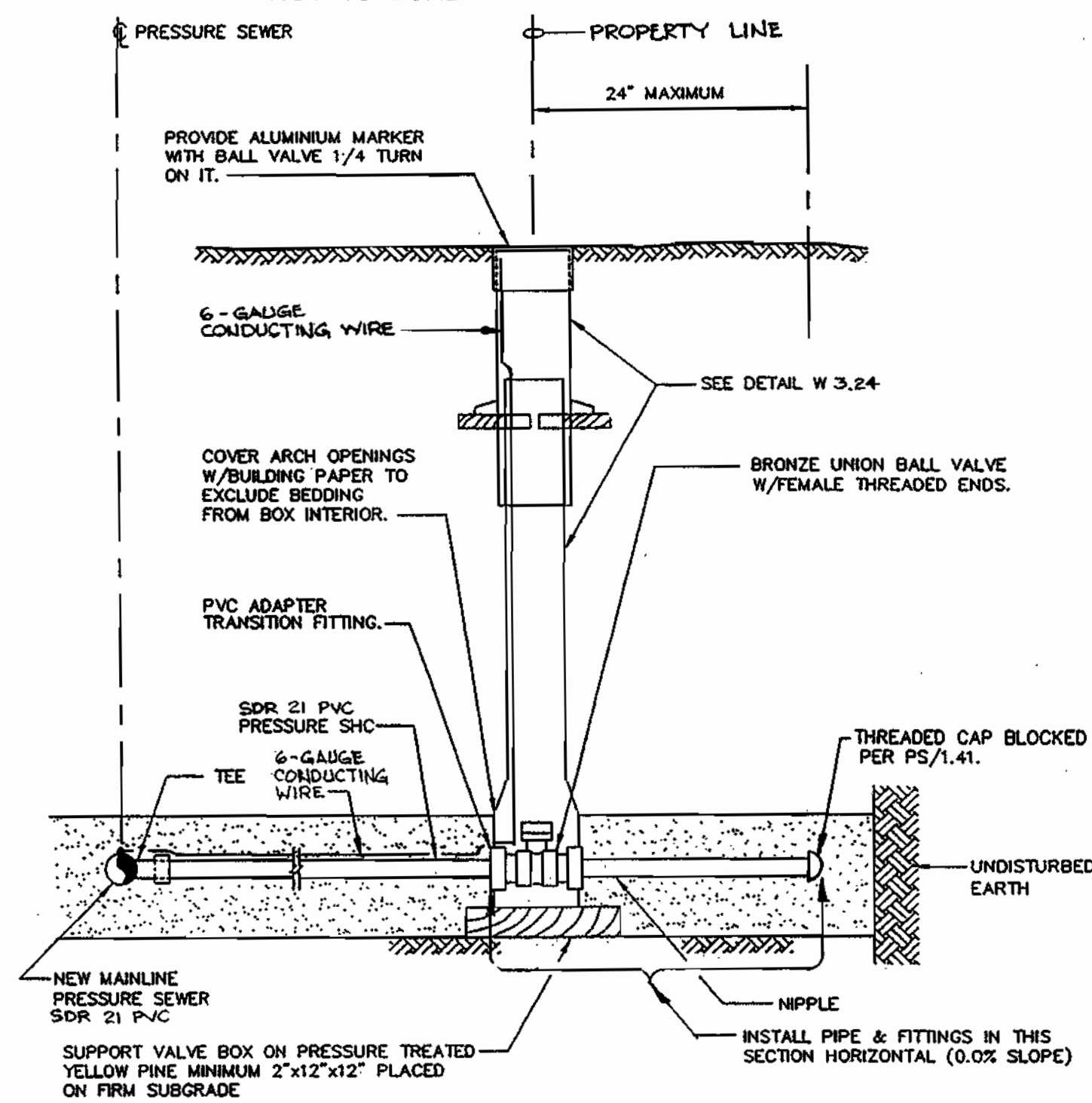
SCALE AS SHOWN
SHEET 3 OF 6



- NOTES:
- PRESSURE SEWER SHALL BE INSTALLED WITH A MINIMUM OF 10'-0" HORIZONTAL CLEARANCE FROM ANY WATER MAIN OR WATER HOUSE CONNECTION UNLESS OTHERWISE SHOWN ON THE CONTRACT DRAWINGS. WHERE 10'-0" HORIZONTAL CLEARANCE CANNOT BE MAINTAINED, THE BOTTOM OF THE WATER PIPE SHALL BE A MINIMUM OF 1'-6" ABOVE THE TOP OF THE PRESSURE SEWER.
 - INSTALL PRESSURE SEWER WITH A MINIMUM VERTICAL CLEARANCE OF 1'-0" AT WATER MAIN CROSSINGS UNLESS OTHERWISE SHOWN ON THE CONTRACT DRAWINGS. IF THE PRESSURE SEWER IS ABOVE THE WATER MAIN, ONE FULL 18 TO 20 FOOT NOMINAL LENGTH OF THE PRESSURE SEWER PIPE SHALL BE CENTERED AT THE CROSSING AND THE BEDDING, HAUNCHING AND INITIAL BACKFILL MATERIAL FOR THE PRESSURE SEWER SHALL BE COMPACTED SPECIAL BACKFILL MATERIAL FOR 10'-0" ON BOTH SIDES OF THE WATER MAIN.
 - MAINLINE PRESSURE SEWER OR PRESSURE SEWER HOUSE CONNECTION SHALL NOT BE INSTALLED IN A COMBINED TRENCH WITH A WATER MAIN OR A WATER HOUSE CONNECTION.

PRESSURE SEWER TRENCH & BEDDING DETAIL

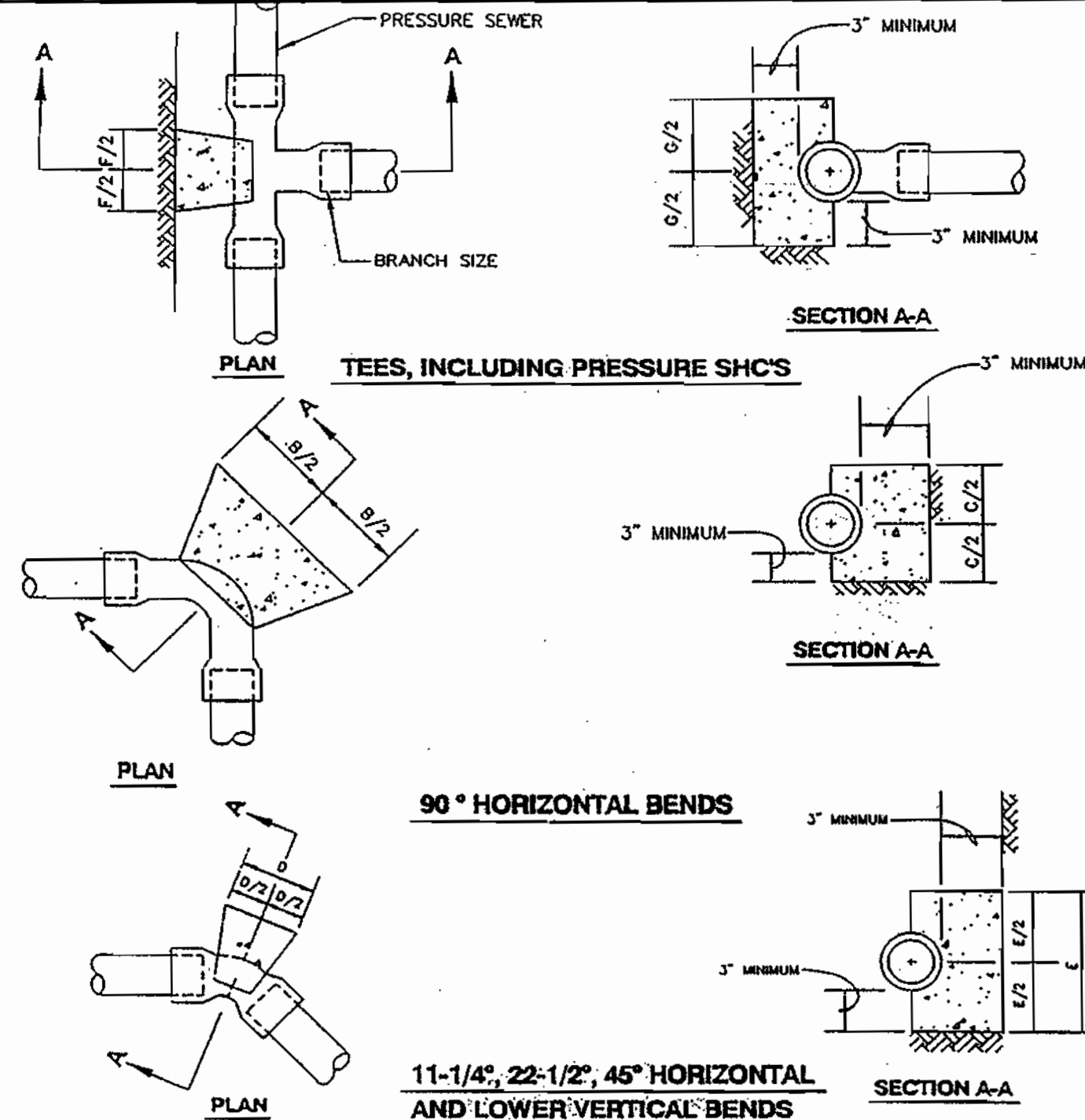
NOT TO SCALE



- NOTES:
- SERVICE VALVE TO BE LEFT IN THE CLOSED POSITION.
 - UNLESS OTHERWISE NOTED ALL 2" DIAMETER PIPE SHALL HAVE SOLVENT CEMENT JOINTS.
 - FITTINGS SHALL BE BLOCKED OR ANCHORED IN ACCORDANCE WITH PRESSURE SEWER BLOCKING DETAILS.

PRESSURE SHC WITH SERVICE VALVE ASSEMBLY

NOT TO SCALE

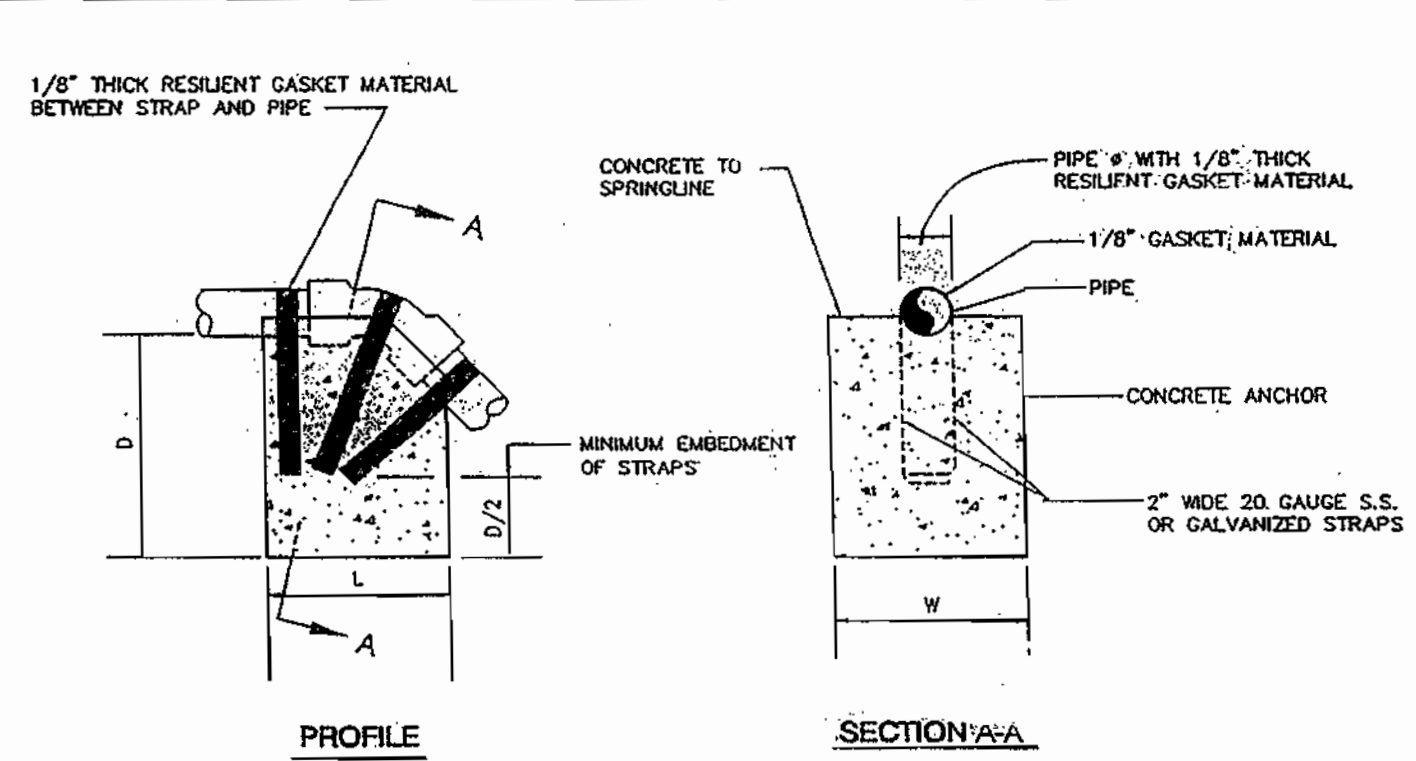


PIPE SIZE	B	C	D	E	F	G
1-1/4" AND 1-1/2"	8"	8"	5"	5"	10"	6"
2"	10"	10"	7"	7"	10"	10"
2-1/2"	10"	10"	7"	7"	10"	10"
3"	12"	12"	9"	9"	12"	12"
4"	26"	26"	12"	12"	16"	12"

- NOTES:
- Fc=3000 psi @ 28 DAYS.
 - CARRY ALL BEARING SURFACES TO UNDISTURBED GROUND OR FIRM SUBGRADE.
 - BUTTRISS SIZED FOR 150 psi.
 - SEE PS/142 FOR UPPER VERTICAL BENDS.
 - DO NOT ENCASE JOINTS.

PRESSURE SEWER BLOCKING DETAILS

NOT TO SCALE

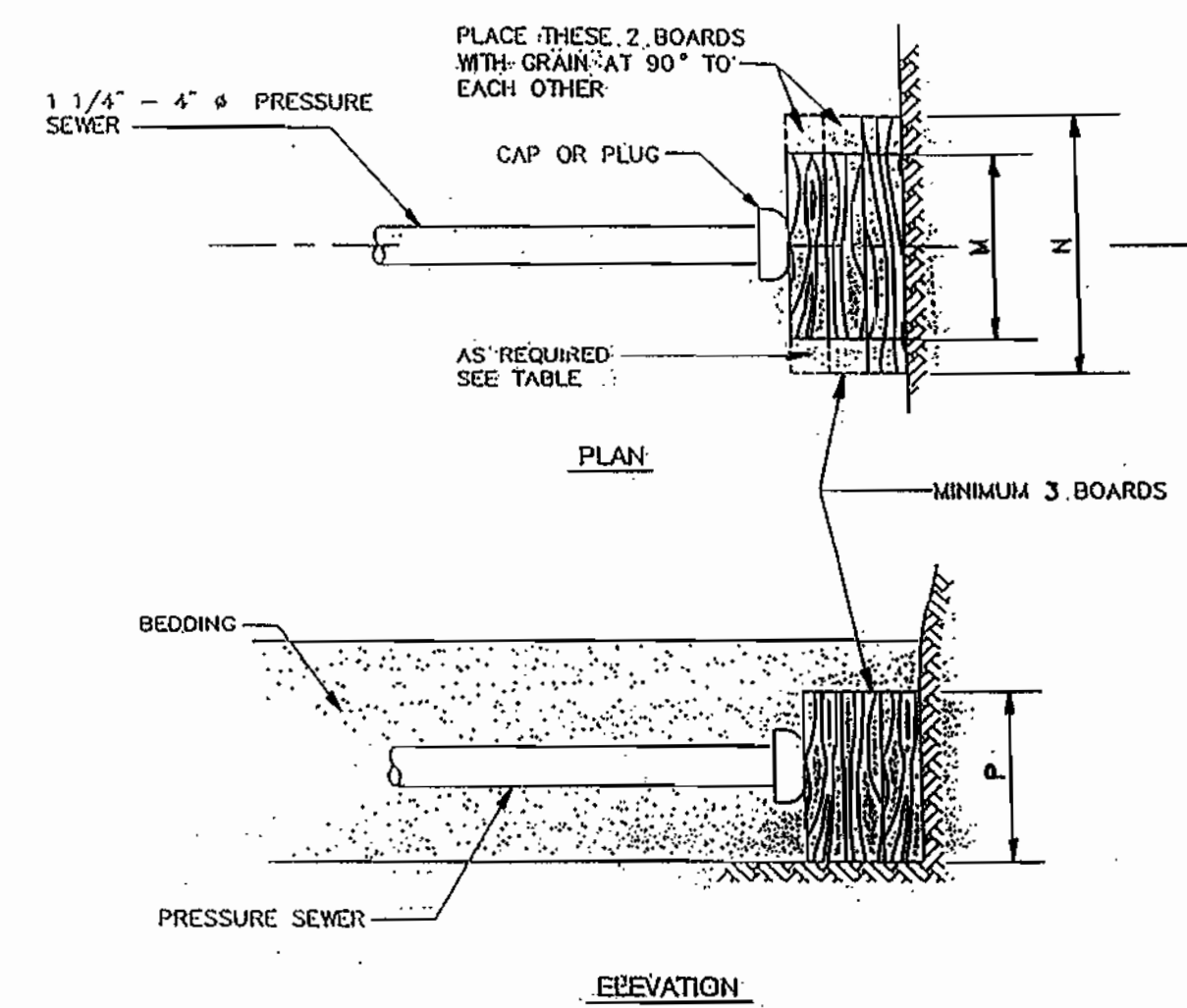


BEND	SIZE IN INCHES			
	1-1/4-1-1/2	2-2-1/2	3	4
11 1/4 °	L	12	15	18
	W	10	12	15
	D	10	15	18
22 1/2 °	L	15	20	24
	W	15	20	24
	D	12	12	18
45 °	L	20	24	30
	W	20	20	24
	D	12	20	24

- NOTES:
- PAINT EXPOSED GALVANIZED STRAPS W/2 COATS OF BITUMINOUS PAINT.
 - Fc=3000 psi @ 28 DAYS.
 - CARRY ALL BEARING SURFACE TO UNDISTURBED EARTH OR FIRM SUBGRADE.
 - CONCRETE ANCHORAGE DIMENSIONS ARE BASED ON TOTAL PRESSURE OF 150 PSI.

PRESSURE SEWER ANCHORS UPPER VERTICAL BENDS

NOT TO SCALE

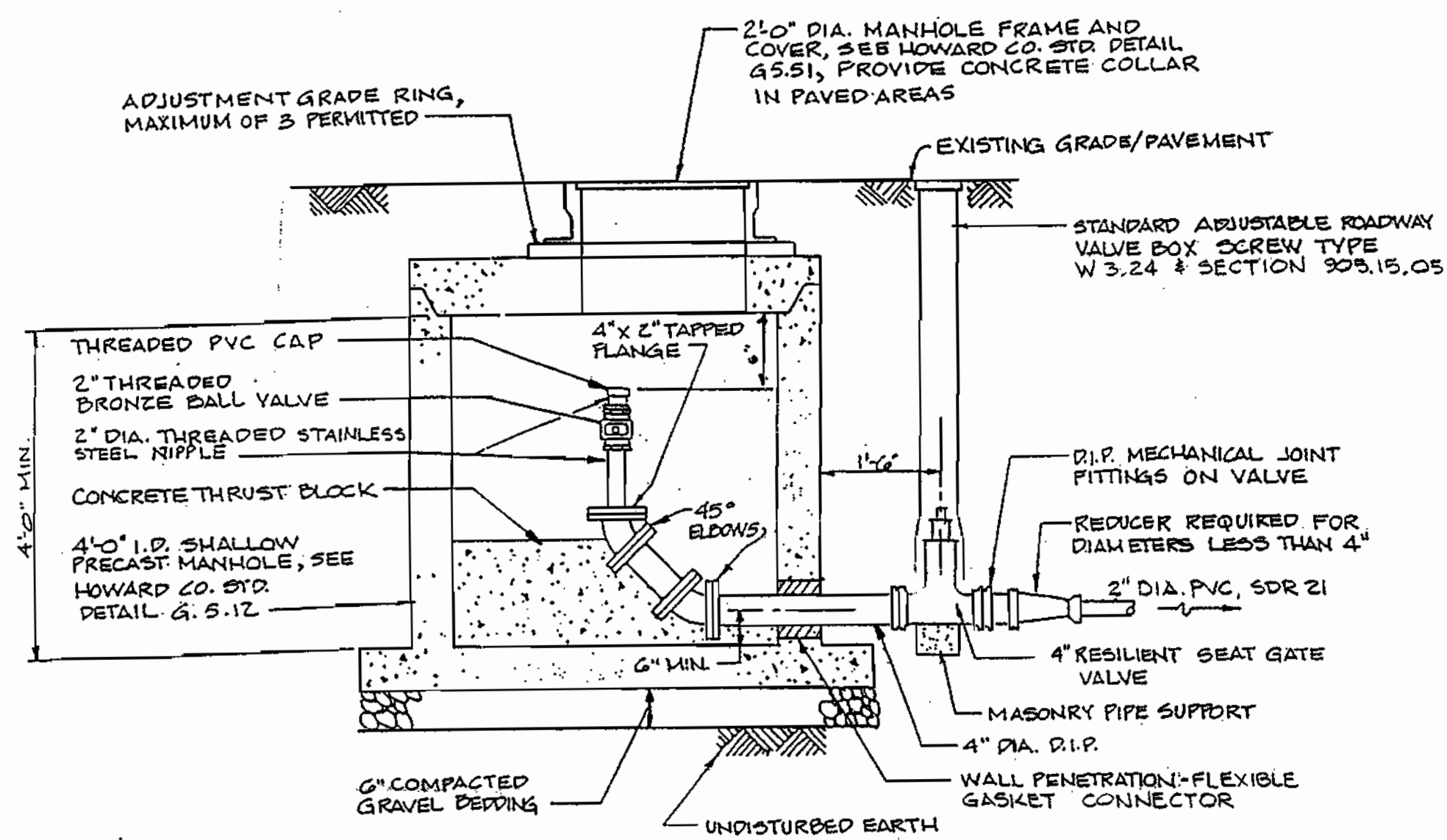


PIPE SIZE	M	N	P
1 1/4"	6"	6"	8"
1 1/2"	6"	6"	8"
2"	6"	8"	8"
2 1/2"	8"	8"	10"
3"	12"	18"	12"
4"	12"	18"	12"

- NOTES:
- CARRY ALL BEARING SURFACES TO UNDISTURBED EARTH OR FIRM SUBGRADE.
 - BUTTRISS SIZED FOR 150 psi.
 - NOMINAL THICKNESS OF ALL BOARDS IS 2".
 - ALL BOARDS TO BE PRESSURE TREATED (CCA) YELLOW PINE.

CAP & PLUG BLOCKING DETAIL

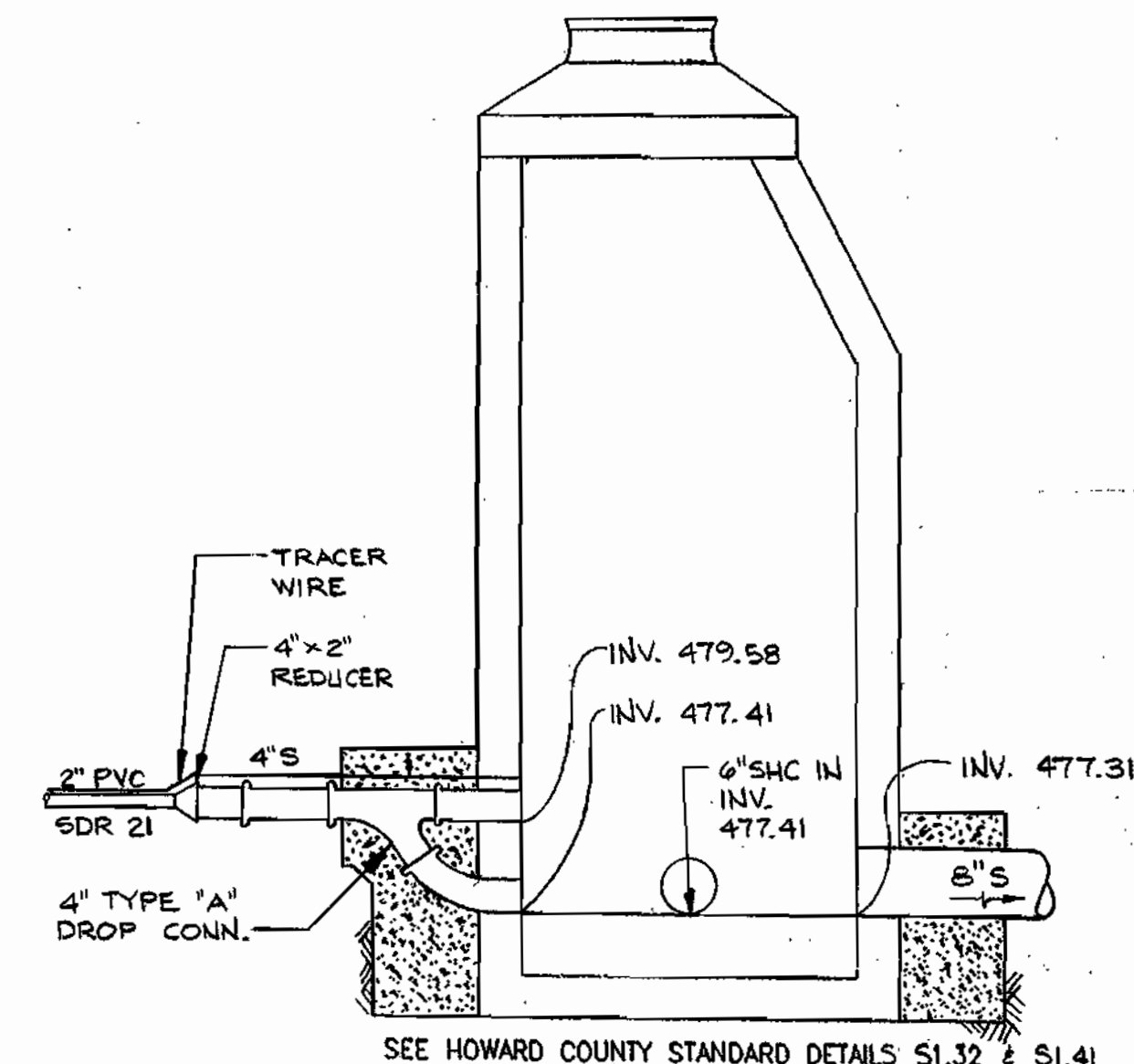
NOT TO SCALE



NOTE: ALL PIPING AND FITTINGS IN THE MANHOLE, EXCLUDING THE VALVE NIPPLE, SHALL BE 4 INCH DIA. DUCTILE IRON.

TERMINAL FLUSHING CONNECTION

NOT TO SCALE



SEE HOWARD COUNTY STANDARD DETAILS S1.32 & S1.41

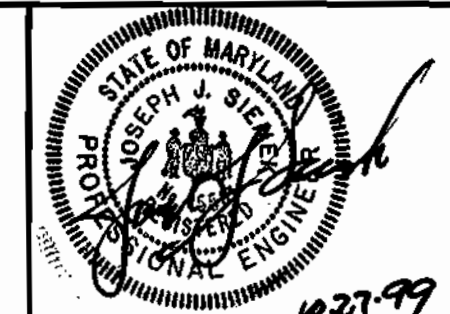
PRESSURE SEWER CONNECTION TO DROP MANHOLE

NOT TO SCALE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Director of Public Works: *Lawrence J. ...* DATE: 4/28/02
 Chief, Bureau of Engineering: *Ed ...* DATE: 1/3/02
 Chief, Bureau of Utilities: *...* DATE: 1/3/02
 Chief, Water & Sewer Division: *...* DATE: 1-3-2000

WALLACE, MONTGOMERY & ASSOCIATES
CIVIL AND STRUCTURAL ENGINEERS
110 WEST ROAD
TOWSON, MARYLAND 21204

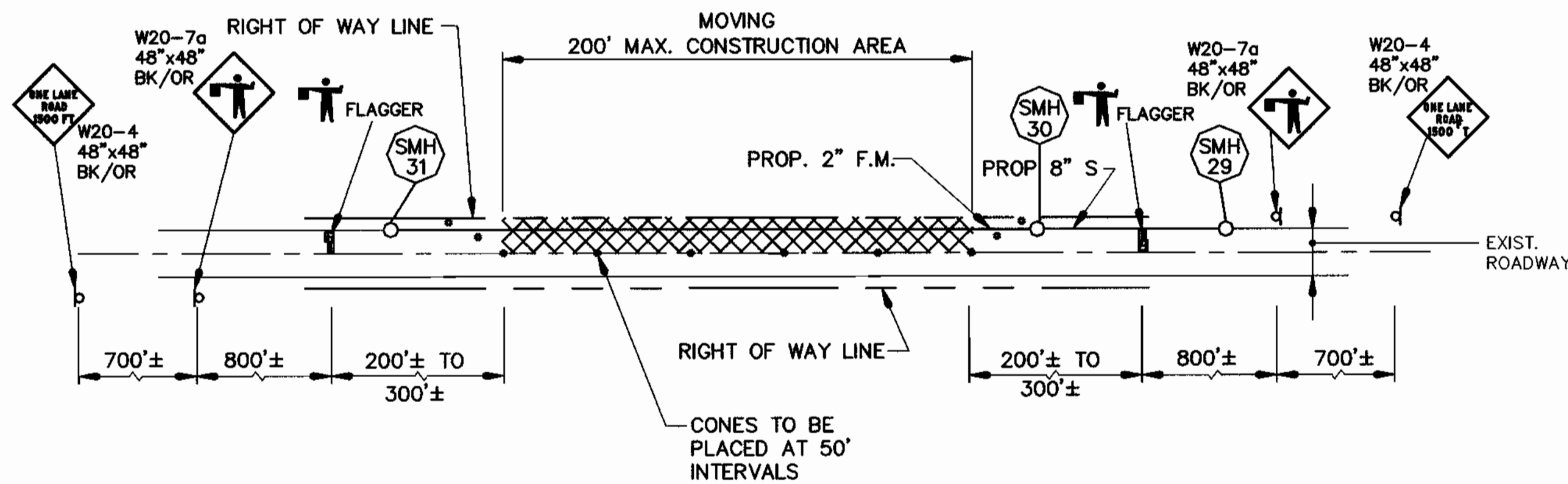
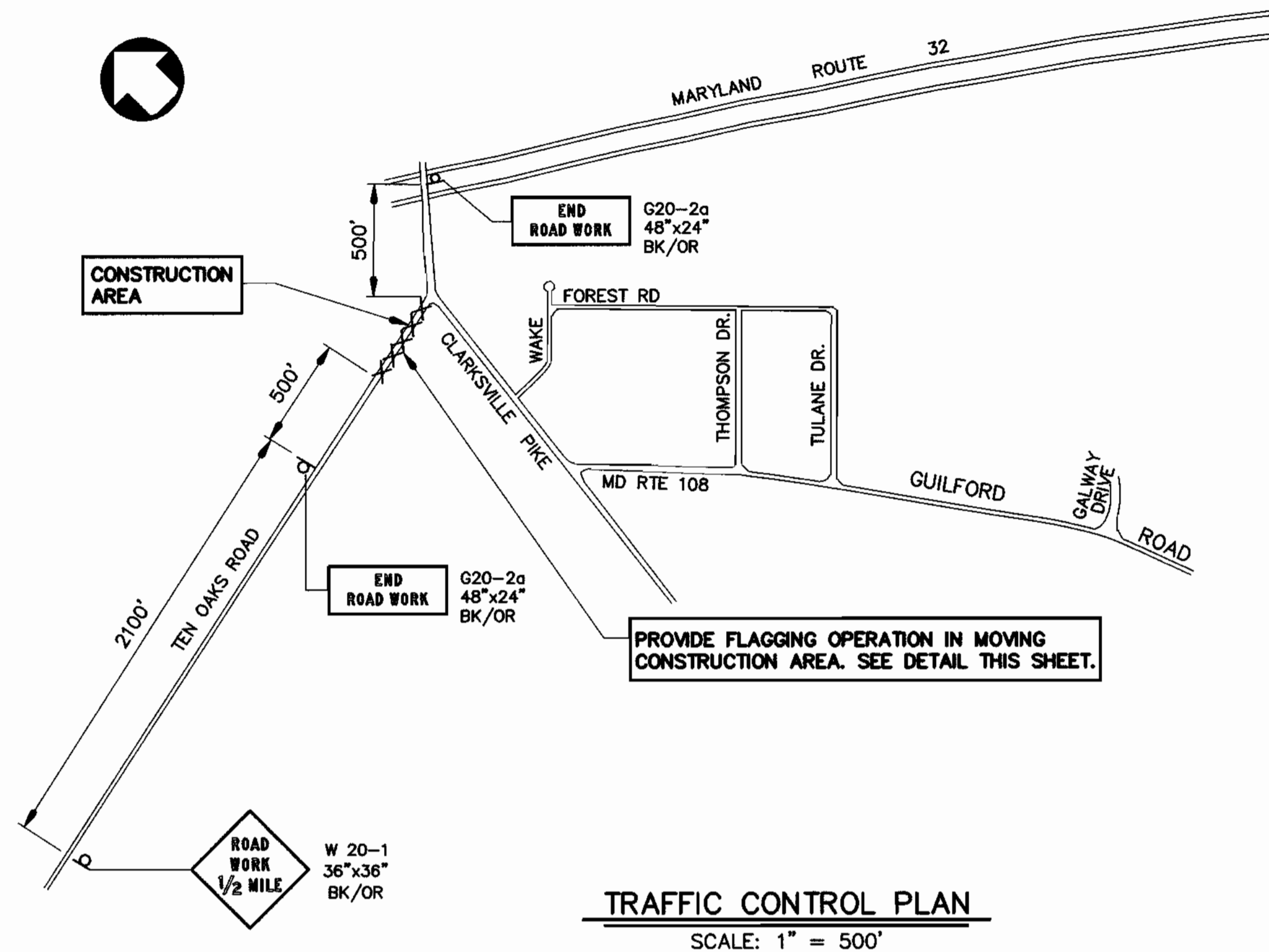


DES: LAF					
DRN: KJP					
CHK: JJS					
DATE: OCT. 1999	BY: NO.	REVISION	DATE	600' SCALE MAP NO. S 34 & 35	BLOCK NO. 12 & 18

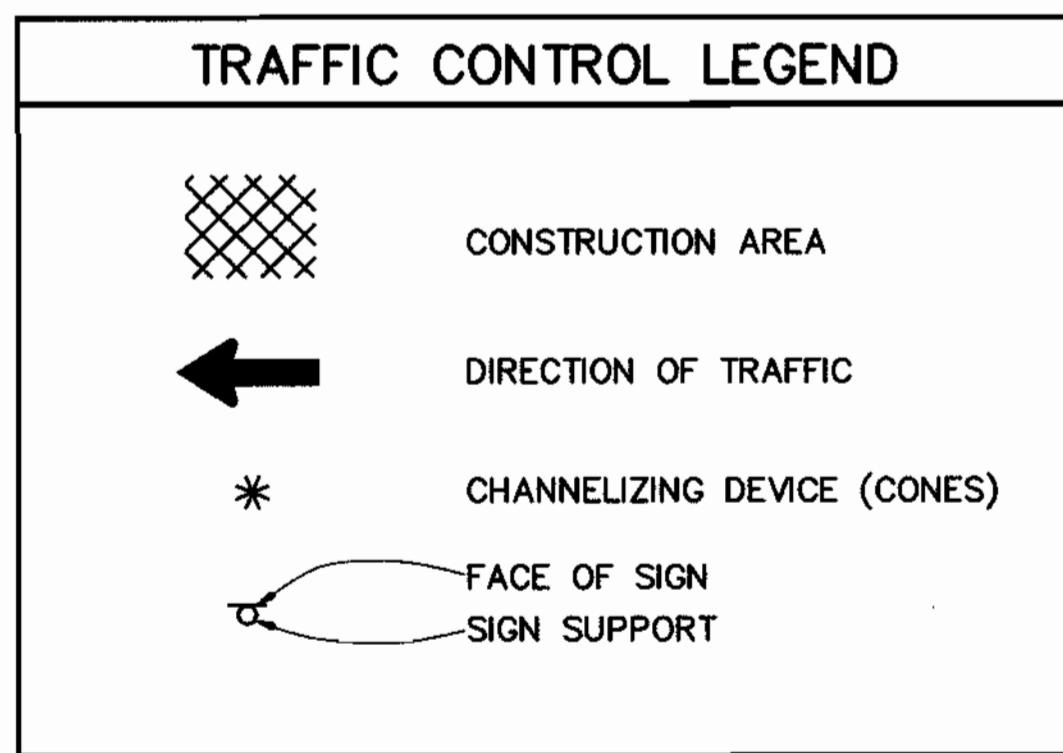
PRESSURE SEWER DETAILS

TEN OAKS ROAD SEWER MAIN
CAPITAL PROJECT S-6210 PHASE II
CONTRACT NO. 30-3770
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 4 OF 6



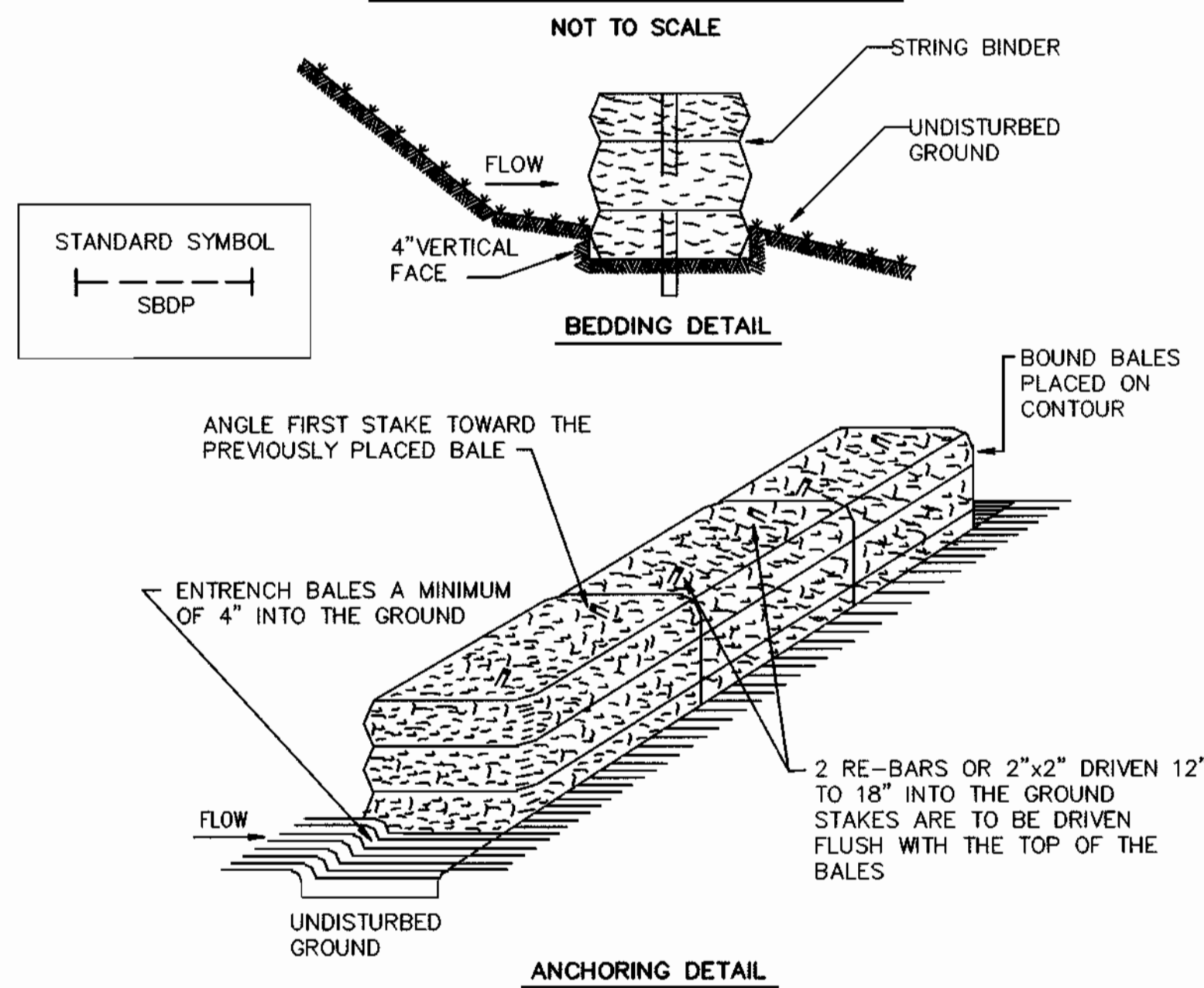
TYPICAL FLAGGING OPERATION DETAIL
NOT TO SCALE



TRAFFIC CONTROL NOTES:

1. THE M.S.H.A. AND HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS (410-313-2430) SHALL BE NOTIFIED AT LEAST 48 HOURS PRIOR TO BEGINNING ANY WORK IN ORDER TO SCHEDULE A FIELD INSPECTION OF TRAFFIC CONTROL DEVICES.
2. ALL WORK ZONE TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS CONTAINED IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND THE MARYLAND STATE HIGHWAY ADMINISTRATION.
3. NO WORK SHALL BE PERFORMED IN THE ROADWAY FROM 6 AM TO 9 AM & 4 PM TO 7 PM.
4. TRAVEL LANES SHALL BE A MINIMUM OF TEN FEET IN WIDTH. WHEN ONLY ONE LANE IS OPEN, A FLAG PERSON(S) PROPERLY TRAINED AND ATTIRED WITH THE APPROPRIATE SIGNING SHALL BE PROVIDED. THE ROADWAY SHOULD BE REOPENED TO TWO LANES IN ACCORDANCE WITH WORK HOUR RESTRICTIONS.
5. ALL OPEN TRENCHES SHALL BE CLOSED AT THE END OF EACH DAY. IF STEEL PLATES ARE TO BE USED, APPROPRIATE SIGNING WILL BE REQUIRED.
6. PLACE STEEL PLATES FLUSH WITH ROAD SURFACE OR WEDGED IN A MANNER TO PREVENT ROCKING OR SHIFTING. EACH OF THE FOUR (4) CORNERS WILL BE PINNED OR SPIKED DOWN, SUFFICIENTLY TO PREVENT PLATE MOVEMENT. COLD MIX WILL BE PLACED AROUND ALL SIDES OF THE PLATE TO ALLOW MOTOR VEHICLES TO CROSS WITHOUT MOVING THE PLATE OR DAMAGING THE VEHICLE. THE PLATE(S) WHILE IN PLACE WILL BE MONITORED TWICE A DAY, SEVEN (7) DAYS A WEEK, UNTIL THEY CAN BE REMOVED. NO STEEL PLATES SHALL REMAIN ON THE TRAVELED PORTION OF THE ROADWAY IN EXCESS OF TEN (10) DAYS. ANY WORK REQUIRING ADDITIONAL TIME MUST BE APPROVED IN WRITING BY HOWARD COUNTY AND THE STATE HIGHWAY ADMINISTRATION.
7. EXISTING REGULATORY WARNING AND GUIDE SIGNS THAT DO NOT APPLY DUE TO TEMPORARY TRAFFIC CONDITIONS WILL BE COVERED AS DIRECTED BY THE ENGINEER.
8. ACCESS SHALL BE PROVIDED TO ALL EXISTING DRIVEWAYS AT ALL TIMES. DURING ONE LANE FLAGGING OPERATIONS ENSURE THAT NO VEHICLES EXIT FROM ANY DRIVEWAYS, BETWEEN BOTH FLAG PERSONS, IN THE INCORRECT DIRECTION.
9. ALL CONES AND FLAG PERSON(S) SHALL BE MOVED ACCORDINGLY AS CONSTRUCTION PROGRESSES. ALL WORK ZONE SIGNING SHALL BE IN ACCORDANCE WITH THE TYPICAL SIGN PLACEMENT SHOWN ON THE TRAFFIC CONTROL PLAN, TYPICAL FLAGGING OPERATION DETAIL, AND SHALL NOT OBSTRUCT EXISTING TRAFFIC CONTROL DEVICES.
10. IF TEMPORARY PARKING RESTRICTIONS WILL BE REQUIRED, INSTALL SIGNS AND NOTIFY AT LEAST ONE DAY IN ADVANCE ALL AFFECTED RESIDENTS. CONTACT S.H.A. AND HOWARD COUNTY TRAFFIC ENGINEERING BEFORE ANY PARKING RESTRICTIONS ARE ENACTED.
11. CONSTRUCTION VEHICLES SHALL NOT BE PARKED IN A MANNER THAT WILL IMPEDE TRAFFIC OR IMPAIR SIGHT DISTANCE.
12. DURING BORE AND JACK CROSSING OF MD ROUTE 108, PROVIDE 150 LF OF PORTABLE CONCRETE BARRIER AT THE EDGE OF THE SHOULDER. COORDINATE LOCATION AND ORIENTATION WITH THE STATE HIGHWAY ADMINISTRATION.

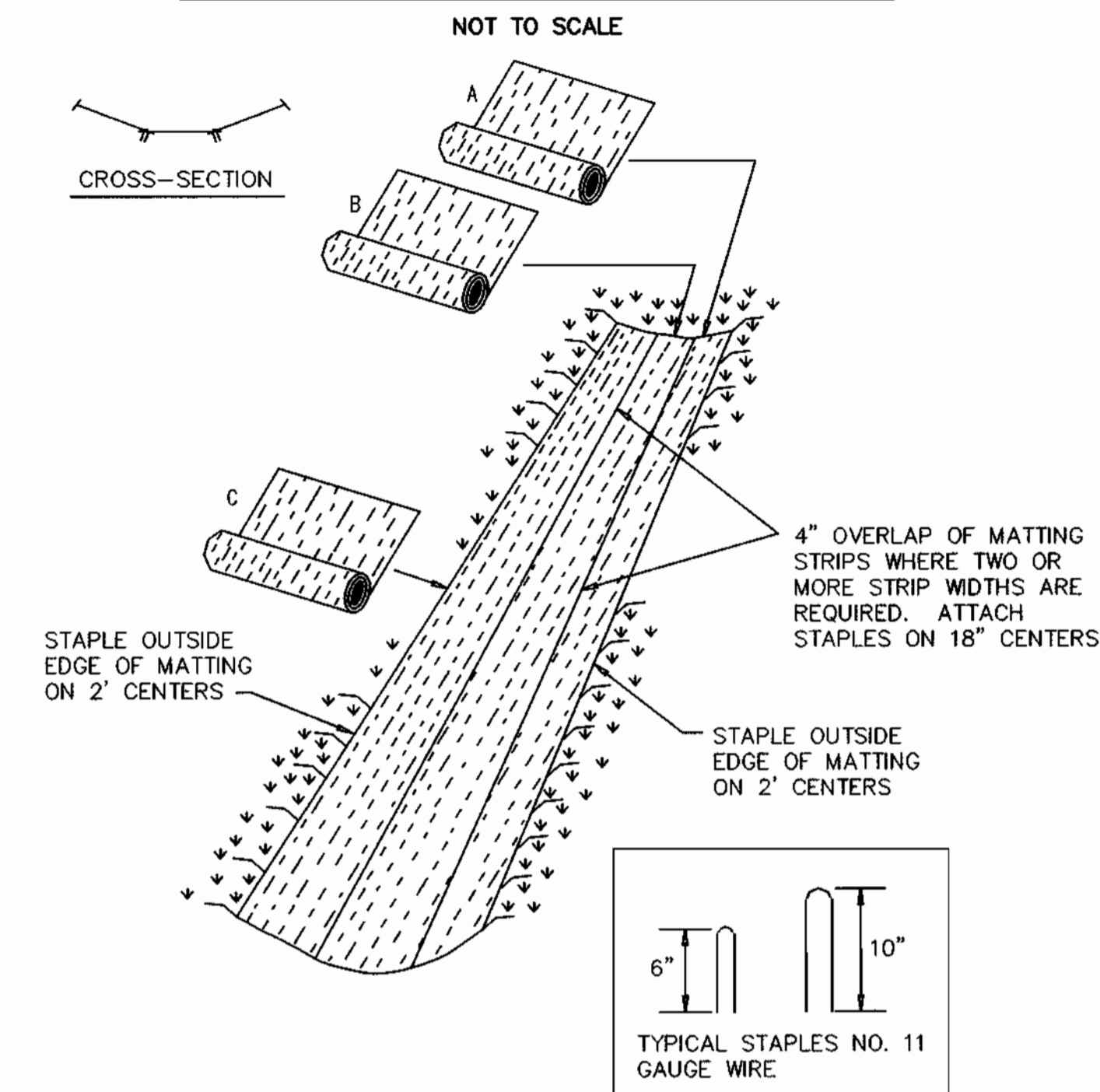
SBD - STRAW BALE DIKE



CONSTRUCTION SPECIFICATIONS

1. Bales shall be placed at the toe of a slope, on the contour, and in a row with the ends of each bale tightly abutting the adjacent bales.
2. Each bale shall be entrenched in the soil a minimum of 4" and placed so the bindings are horizontal.
3. Bales shall be securely anchored in place by either two stakes or re-bars driven through the bale 12" to 18" into the ground. The first stake in each bale shall be driven toward the previously laid bale at an angle to force the bales together. Stakes shall be driven flush with the top of the bale.
4. Straw bale dikes shall be inspected frequently and after each rain event and maintenance performed as necessary.
5. All bales shall be removed when the site has been stabilized. The trench where the bales were located shall be graded flush and stabilized.

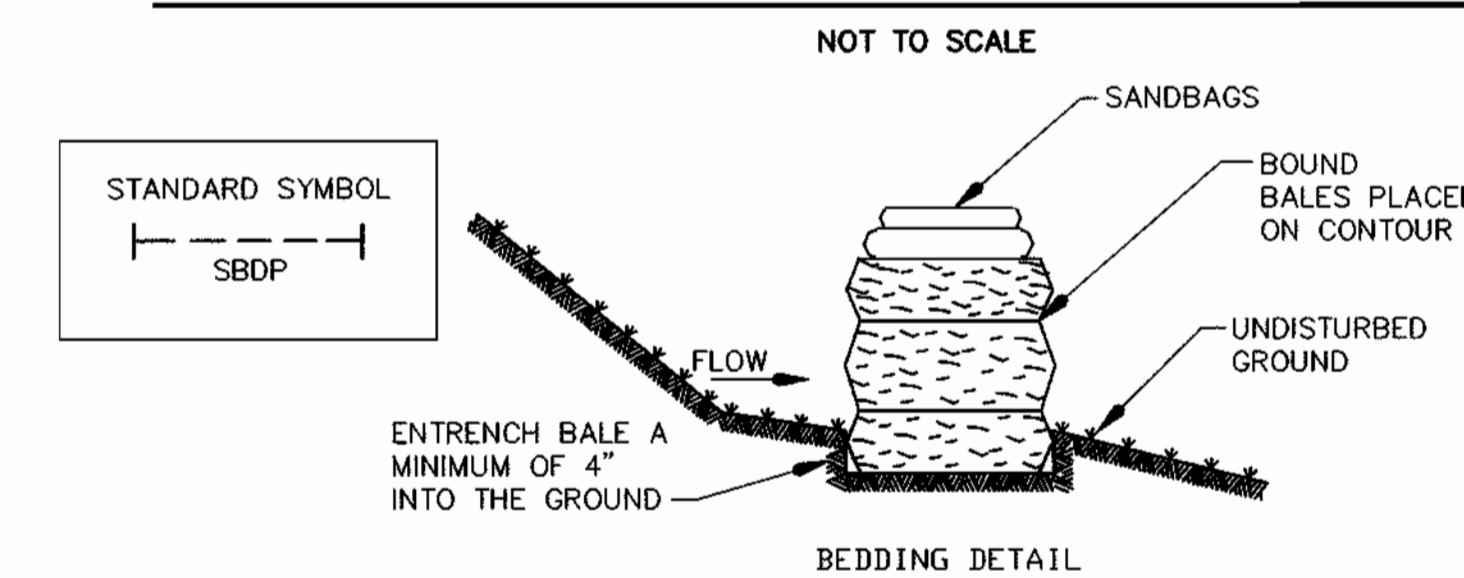
ECM - EROSION CONTROL MATTING



CONSTRUCTION SPECIFICATIONS

1. Key-in the matting by placing the top ends of the matting in a narrow trench, 6" in depth. Backfill the trench and tamp firmly to conform to the channel cross-section. Secure with a row of staples about 4" down slope from the trench. Spacing between staples is 6".
 2. Staple the 4" overlap in the channel center using an 18" spacing between staples.
 3. Before stapling the outer edges of the matting, make sure the matting is smooth and in firm contact with the soil.
 4. Staples shall be placed 2' apart with 4 rows for each strip, 2 outer rows, and 2 alternating rows down the center.
 5. Where one roll of matting ends and another begins, the end of the top strip shall overlap the upper end of the lower strip by 4", shiplap fashion. Reinforce the overlap with a double row of staples spaced 6" apart in a staggered pattern on either side.
 6. The discharge end of the matting liner should be similarly secured with 2 double rows of staples.
- Note: If flow will enter from the edge of the matting then the area effected by the flow must be key-in.

SBDP - STRAW BALE DIKE ADJACENT TO PAVED AREAS



CONSTRUCTION SPECIFICATIONS

1. Bales shall be placed at the toe of a slope, on the contour, and in a row with the ends of each bale tightly abutting the adjacent bales.
2. Each bale shall be entrenched in the soil a minimum of 4" and placed so the bindings are horizontal.
3. Bales shall be weighed down in place by seven sandbags per bale.
4. Straw bale dikes shall be inspected frequently and after each rain event and maintenance performed as necessary.
5. All bales shall be removed when the site has been stabilized. The trench where the bales were located shall be graded flush and stabilized.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Director of Public Works
4/26/00

Chief, Bureau of Engineering
1/3/2000

WALLACE, MONTGOMERY & ASSOCIATES
CIVIL AND STRUCTURAL ENGINEERS
110 WEST ROAD
TOWSON, MARYLAND 21204



DES: LAF
DRN: KJP
CHK: JJS
DATE: OCT. 1999

TRAFFIC CONTROL PLAN &
SEDIMENT CONTROL DETAILS

TEN OAKS ROAD SEWER MAIN
CAPITAL PROJECT S-6210 PHASE II
CONTRACT NO. 30-3770
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 5 OF 6

600' SCALE MAP NO. S 34 & 35 BLOCK NO. 12 & 18

STANDARD SEDIMENT CONTROL NOTES

1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (410-313-1855).
2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.
3. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITH: A.) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES STEPPER THAN 3:1, B.) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
4. ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 7 OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
5. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING, SOD, TEMPORARY SEEDING AND MULCHING (SEC. G). TEMPORARY STABILIZATION WITH MULCH ALONE SHALL ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
6. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
7. SITE ANALYSIS:

TOTAL AREA OF SITE	=	7.34	ACRES
AREA DISTURBED	=	0.814	ACRES
AREA TO BE ROOFED OR PAVED	=	0.040	ACRES
AREA TO BE VEGETATIVELY STABILIZED	=	0.774	ACRES
TOTAL CUT	=	1305	CU. YDS.
TOTAL FILL	=	1305	CU. YDS.

 OFF SITE WASTE/BORROW AREA LOCATION: SITE WITH AN ACTIVE GRADING PERMIT AS APPROVED BY ENGINEER
8. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
9. ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
10. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
11. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACKFILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.
12. PLACE EXCAVATED SOIL ON THE UPHILL SIDE OF THE TRENCHES.

SEQUENCE OF CONSTRUCTION

1. CONTACT HOWARD COUNTY BUREAU OF CONSTRUCTION INSPECTION DIVISION (410-313-1870) PRIOR TO STARTING DATE. (4 DAYS)
2. INSTALL EROSION AND SEDIMENT CONTROL DEVICES AS PER SECTION 219 OF THE HOWARD COUNTY DESIGN MANUAL VOL. IV. (2 DAYS)
3. EXCAVATE AND INSTALL PROPOSED 8" GRAVITY SEWER MAIN (30 DAYS)
4. CONSTRUCT BORE AND JACK CROSSING OF MD 108 (5 DAYS)
5. EXCAVATE AND INSTALL PROPOSED PRESSURE SEWER MAIN (14 DAYS)
6. RESTORE DISTURBED AREA AT BORE AND JACK RECEIVING PIT PER HOWARD COUNTY STANDARDS (1 DAY)
7. RESTORE TRENCHES TO THEIR ORIGINAL CONDITION AS PER HOWARD COUNTY STANDARDS WITH TEMPORARY PAVING HOWARD COUNTY STANDARD SPECIFICATION. (2 DAYS)
8. UPON PERMISSION FROM HOWARD COUNTY SEDIMENT CONTROL INSPECTION, REMOVE SEDIMENT CONTROL DEVICES. (1 DAY)
9. INSTALL PERMANENT PAVING PATCH OVER TRENCH. (2 DAYS)

RESTORATION NOTES:

1. SAW CUT THE EXISTING BITUMINOUS PAVING, CURB AND GUTTER, AND SIDEWALK.
2. REPAIR BITUMINOUS PAVING IN ACCORDANCE WITH STANDARD DETAIL G4.01.
3. REPAIR CURB AND GUTTER IN ACCORDANCE WITH STANDARD DETAIL R 3.01 AND MATCH EXISTING CONDITIONS.
4. REPAIR CONCRETE SIDEWALK IN ACCORDANCE WITH STANDARD DETAIL R 3.05 AND MATCH EXISTING CONDITIONS.

TEMPORARY SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION - LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS - APPLY 60 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ.FT.).

SEEDING - FOR PERIODS MARCH 1 THRU APRIL 30 AND FROM AUGUST 15 THRU OCTOBER 15, SEED WITH 2-1/2 BUSHEL PER ACRE OF ANNUAL RYE (3.2 LBS/1000 SQ. FT.). FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 3 LBS PER ACRE OF WEEPING LOVEGRASS (0.07 LBS/1000 SQ. FT.). FOR THE PERIOD NOVEMBER 16 THRU FEBRUARY 28, PROTECT SITE BY APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOD.

MULCHING - APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ. FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GAL PER ACRE (5 GAL/1000 SQ. FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FT OR HIGHER, USE 348 GAL PER ACRE (8 GAL/1000 SQ. FT.) FOR ANCHORING.

REFER TO THE "1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" FOR RATE AND METHODS NOT COVERED.

PERMANENT SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING SCHEDULES:

- 1) **PREFERRED** - APPLY 2 TONS PER ACRES DOLOMITIC LIMESTONE (92 LBS/1000 SQ. FT.) AND 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ. FT.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS PER ACRE 30-0-0 UREAFORM FERTILIZER (9 LBS/1000 SQ. FT.)
- 2) **ACCEPTABLE** - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ. FT.) AND 1000 LBS PER ACRE 10-10-10 FERTILIZER (23 LBS/1000 SQ. FT.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL.

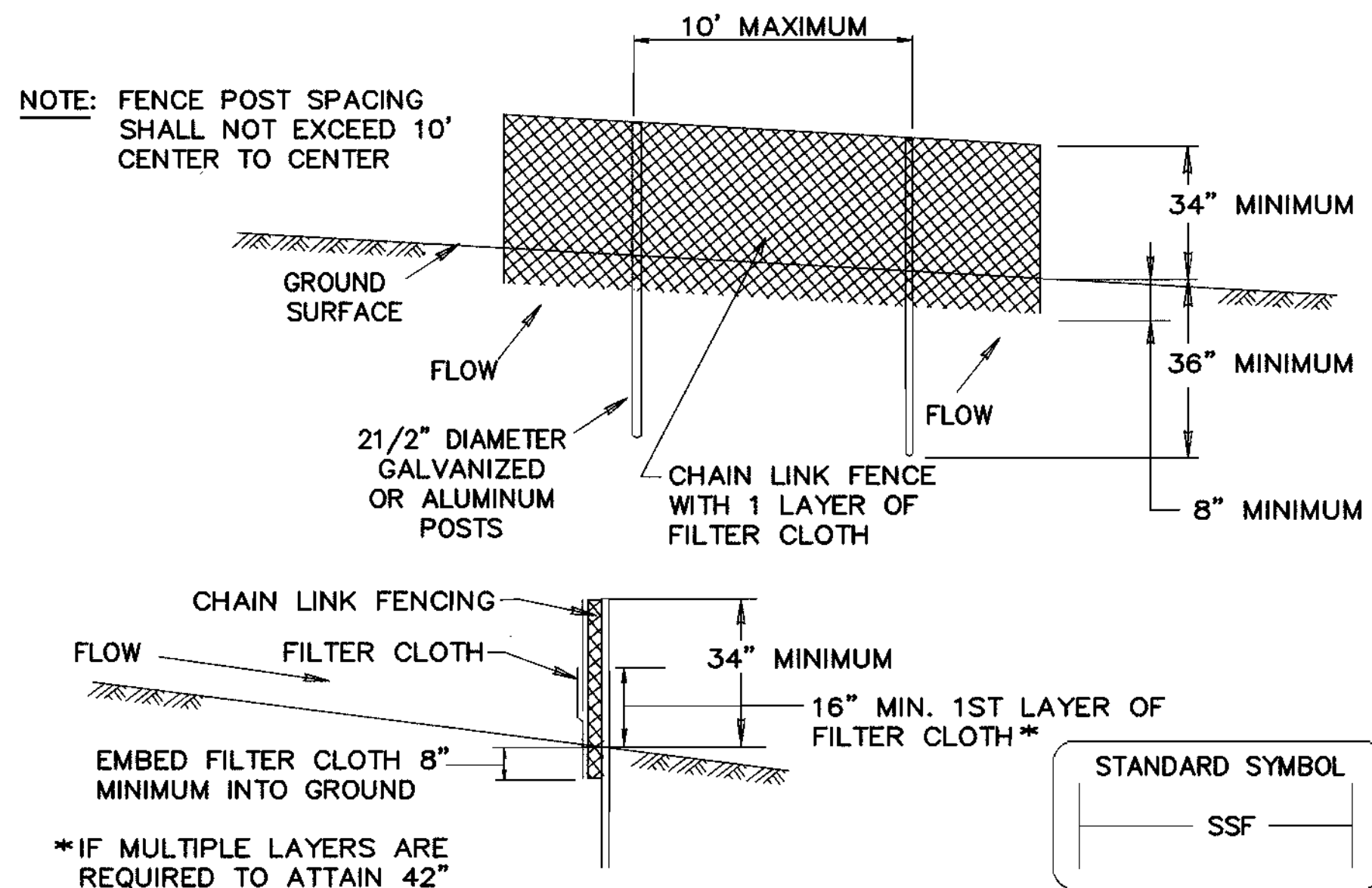
SEEDING - FOR THE PERIODS MARCH 1 THRU APRIL 30, AND AUGUST 1 THRU OCTOBER 15, SEED WITH 60 LBS PER ACRE (1.4 LBS/1000 SQ. FT.) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 THRU JULY 31, SEED WITH 60 LBS KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS PER ACRE (0.05 LBS/1000 SQ. FT.) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THRU FEBRUARY 28, AS POSSIBLE IN THE SPRING. OPTION (2) USE SOD. OPTION (3) SEED WITH 60 LBS/ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS/ACRE WELL ANCHORED STRAW.

MULCHING - APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ. FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ. FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ. FT.) FOR ANCHORING.

MAINTENANCE - INSPECT ALL SEEDED AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

RESTORATION SCHEDULE

STATION	TO STATION	DISTANCE	MATERIAL
EX SMH 21	SMH 22	60 FEET	SEEDING
SMH 22	SMH 23	20 FEET	SEEDING
SMH 23	SMH 24	90 FEET	SEEDING
SMH 24	0+08	8 FEET	SEEDING
0+08	0+15	7 FEET	BITUMINOUS PAVING AND CURB & GUTTER
SMH 23	SMH 25	60 FEET	SEEDING
SMH 25	1+14	114 FEET	SEEDING
1+14	SMH 28	62 FEET	BITUMINOUS PAVING
SMH 28	0+08	8 FEET	BITUMINOUS PAVING
0+08	0+32	28 FEET	BITUMINOUS PAVING AND CURB & GUTTER
0+80	SMH 27	18 FEET	SEEDING
SMH 27	SMH 28	185 FEET	SEEDING
SMH 28	0+08	8 FEET	SEEDING
SMH 27	0+82	62 FEET	SEEDING
0+82	0+84	2 FEET	CURB & GUTTER
0+84	SMH 29	36 FEET	BITUMINOUS PAVING
SMH 29	1+23	123 FEET	BITUMINOUS PAVING
1+23	1+43	20 FEET	SEEDING
1+43	SMH 30	17 FEET	BITUMINOUS PAVING
SMH 30	1+25	125 FEET	BITUMINOUS PAVING
1+25	1+85	40 FEET	SEEDING
1+85	1+80	15 FEET	BITUMINOUS PAVING
1+80	2+47	67 FEET	CURB & GUTTER
2+47	2+95	48 FEET	BITUMINOUS PAVING
2+95	4+55	160 FEET	CURB & GUTTER
4+55	5+00	45 FEET	SEEDING
5+00	SMH 31	50 FEET	BITUMINOUS PAVING
SMH 40	0+09	15 FEET	SEEDING

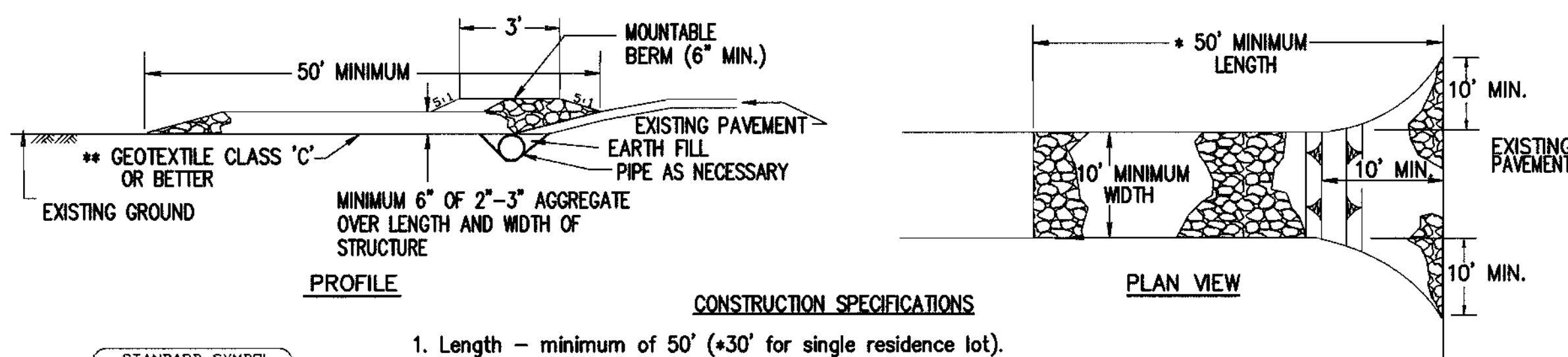


- CONSTRUCTION SPECIFICATIONS**
1. FENCING SHALL BE 42" IN HEIGHT AND CONSTRUCTED IN ACCORDANCE WITH THE LATEST MARYLAND STATE HIGHWAY DETAILS FOR CHAIN LINK FENCING. THE SPECIFICATION FOR A 6' FENCE SHALL BE USED, SUBSTITUTING 42" FABRIC AND 6' LENGTH POSTS.
 2. CHAIN LINK FENCE SHALL BE FASTENED SECURELY TO THE FENCE POSTS WITH WIRE TIES. THE LOWER TENSION WIRE, BRACE AND TRUSS RODS, DRIVE ANCHORS AND POST CAPS ARE NOT REQUIRED EXCEPT ON THE ENDS OF THE FENCE.
 3. FILTER CLOTH SHALL BE FASTENED SECURELY TO THE CHAIN LINK FENCE WITH TIES SPACED EVERY 24" AT THE TOP AND MID SECTION.
 4. FILTER CLOTH SHALL BE EMBEDDED A MINIMUM OF 8" INTO THE GROUND.
 5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6" AND FOLDED.
 6. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND SILT BUILDUPS REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE, OR WHEN SILT REACHES 50% OF FENCE HEIGHT
 7. FILTER CLOTH SHALL BE FASTENED SECURELY TO EACH FENCE POST WITH WIRE TIES OR STAPLES AT TOP AND MID SECTION AND SHALL MEET THE FOLLOWING REQUIREMENTS FOR GEOTEXTILE CLASS F:

TENSILE STRENGTH	50 LBS/IN (MIN.)	TEST: MSMT 509
TENSILE MODULUS	20 LBS/IN (MIN.)	TEST: MSMT 509
FLOW RATE	0.3 GAL/FT ² /MINUTE (MAX.)	TEST: MSMT 322
FILTERING EFFICIENCY	75% (MIN.)	TEST: MSMT 322

SUPER SILT FENCE

NOT TO SCALE



- CONSTRUCTION SPECIFICATIONS**
1. Length - minimum of 50' (+30' for single residence lot).
 2. Width - 10' minimum, should be flared at the existing road to provide a turning radius.
 3. Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. **The plan approval authority may not require single family residences to use geotextile.
 4. Stone - crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
 5. Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.
 6. Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

STABILIZED CONSTRUCTION ENTRANCE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

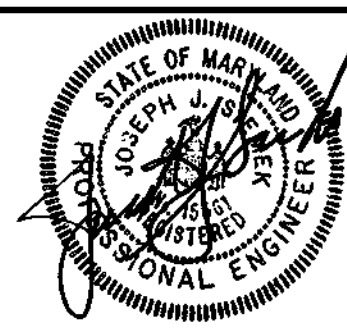
[Signature] 4/24/01
DIRECTOR OF PUBLIC WORKS

[Signature] 4-23-01
CHIEF, BUREAU OF UTILITIES

[Signature] 4-18-01
CHIEF, BUREAU OF ENGINEERING

[Signature] 4-18-01
CHIEF, WATER & SEWER DIVISION

WALLACE, MONTGOMERY & ASSOCIATES
CIVIL AND STRUCTURAL ENGINEERS
110 WEST ROAD
TOWSON, MARYLAND 21204



DES: LAF			
DRN: KJP			
CHK: JJS			
DATE: DEC. 2000	BY: NO.	REVISION	DATE

SEDIMENT CONTROL NOTES & DETAILS

600' SCALE MAP NO. S_34 & 35 BLOCK NO. 12 & 18

TEN OAKS ROAD SEWER MAIN
CAPITAL PROJECT S-6210 PHASE II
CONTRACT NO. 30-3770
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 6 OF 6