

SYSTEMS INTEGRATION BUILDINGS AND VAN PAD (BUILDINGS 12 AND 15) SITE DEVELOPMENT PLAN 05-50

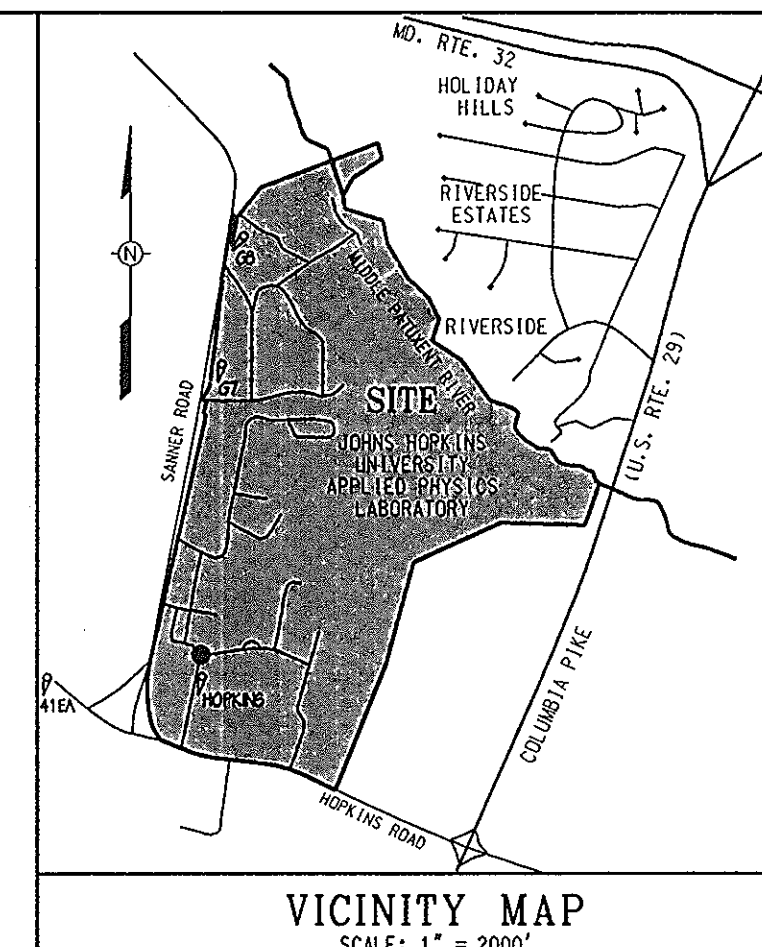
GENERAL NOTES

- ACCESS TO THE CONSTRUCTION AREA THROUGH THE SECURE AREA OF THE APPLIED PHYSICS LABORATORY (WITHIN THE FENCED ENCLOSURE) MUST BE ARRANGED IN ADVANCE BY CONTACTING THE PROGRAM MANAGER.
- SECURITY MUST BE MAINTAINED WITHIN THE EXISTING FENCED AREA. ALL REQUIRED FENCE CONSTRUCTION AND RELOCATION SHALL BE BY JOHN HOPKINS UNIVERSITY APPLIED PHYSICS LAB (JHU-APL). HOWEVER, THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE WITH JHU-APL AS TO WHEN SUCH WORK IS REQUIRED.
- THE CONTRACTOR OR DEVELOPER SHALL CONTACT THE CONSTRUCTION INSPECTION DIVISION 24 HOURS IN ADVANCE OF COMMENCEMENT OF WORK AT 410-313-1880.
- THE CONTRACTOR SHALL CONTACT THE PROGRAM MANAGER AND THE PROJECT MANAGER AT LEAST 5 WORKING DAYS PRIOR TO COMMENCING ANY WORK OR SHUTTING DOWN ANY UTILITIES.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY SPECIFICATIONS AND DETAILS FOR CONSTRUCTION PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
- THE SUBJECT PROPERTY IS ZONED PEC PER THE FEBRUARY 2, 2004 COMPREHENSIVE ZONING PLAN.
- NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE WETLANDS, STREAM(S) OR THEIR REQUIRED BUFFERS AND FOREST CONSERVATION EASEMENTS.
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. ALTHOUGH AESTHETIC LANDSCAPING IS PROPOSED, NO LANDSCAPE PLANTINGS ARE REQUIRED FOR THIS PLAN SINCE NO PROPOSED IMPROVEMENTS ARE ADJACENT TO A PUBLIC ROAD OR ADJOINING PROPERTIES. AS SUCH, NO SURETY IS REQUIRED FOR THE LANDSCAPING.
- THIS PROJECT COMPLIES WITH THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION AS APPROVED UNDER F-04-188.
- ALL PLAN DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
- WATER IS PUBLIC (HOWARD COUNTY). WATER MAINS ON PROPERTY ARE PRIVATELY OWNED AND MAINTAINED.
- SEWER IS PUBLIC (HOWARD COUNTY). SEWER MAINS ON PROPERTY ARE PRIVATELY OWNED AND MAINTAINED.
- THERE ARE NO WETLANDS OR FLOODPLAIN WITHIN THE LIMITS OF THIS PLAN SUBMISSION.
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM (NAD 83).
- ELEVATIONS SHOWN ARE BASED ON NAVD 88. AERIAL SURVEYS OF JHU-APL WERE PERFORMED BY WHITMAN REQUARDT AND ASSOCIATES LLP (WRA) IN NOVEMBER 1998. ADDITIONAL FIELD SURVEYS OF THE SITE WERE PERFORMED BY WRA IN MAY 2004. ADDITIONAL UTILITY INFORMATION WAS PROVIDED BY JHU-APL AND MAY NOT REFLECT CURRENT CONDITIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY CURRENT TOPOGRAPHIC AND UTILITY INFORMATION.
- ALL SITE UTILITIES ARE THE PROPERTY OF JHU-APL. JHU-APL WILL APPROXIMATELY LOCATE HORIZONTAL LOCATIONS OF ALL ACTIVE UTILITIES FOR THE CONTRACTOR.
- APPROXIMATE LOCATION AND INVERTS OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN AN UNINTERRUPTED SERVICE. DUE TO THE PROXIMITY OF LIVE UNDERGROUND UTILITIES, THE OWNER AND WHITMAN, REQUARDT & ASSOCIATES ARE NOT RESPONSIBLE FOR ANY DAMAGE OR INJURY SUSTAINED DURING CONSTRUCTION BY ANY PERSON, VEHICLES OR EQUIPMENT USED ON OR ADJACENT TO THE SITE. THE CONTRACTOR IS ULTIMATELY RESPONSIBLE FOR THE EXACT HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES BY TEST PIT OR OTHER MEANS OF INVESTIGATION APPROVED BY THE OWNER WELL IN ADVANCE OF CONSTRUCTION. UTILITY PROFILES ON THESE PLANS ARE BASED ON DRAWINGS AND RECORDS PROVIDED BY JHU-APL. CONTRACTOR SHALL CONFIRM ACTUAL DEPTH AND PREPARE REVISED PROFILES IF REQUIRED BY CONFLICTS. THE OWNER SHALL APPROVE ALL REVISIONS BEFORE THE START OF THE UTILITY'S CONSTRUCTION. ANY DAMAGE BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
- TRENCH AND INSTALLATION OF NEW UTILITIES SHALL BE SCHEDULED SO THAT ALL TRENCHES WILL BE BACKFILLED AT THE END OF EACH DAY. NO OPEN TRENCHES WILL BE ALLOWED AT THE END OF EACH WORK DAY. TRENCH AREAS SHALL BE MULCHED AND TEMPORARILY SEEDED IN NON-PAVED AREAS AND TRAFFIC BEARING SURFACES SHALL BE INSTALLED IN PAVED AREAS.
- THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM. COORDINATE WITH THE OWNER AS NECESSARY. IF EXISTING SERVICE CANNOT BE MAINTAINED DURING NORMAL WORK HOURS, THE CONTRACTOR SHALL SCHEDULE SHUT DOWN AND TIE-IN TO THE EXISTING UTILITIES AFTER NORMAL WORKING HOURS AT JHU-APL. NORMAL WORKING HOURS ARE 8:30 AM TO 5:00 PM, MONDAY THROUGH FRIDAY.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
- ALL WATER MAINS SHALL BE DUCTILE IRON PIPE CLASS 52. ALL NEW WATER MAIN TAPS SHALL BE WET TAPS THAT WILL NOT CAUSE THE INTERRUPTION OF WATER SERVICE AT JHU-APL. ALL PIPE JOINTS SHALL BE BONDED TO INSURE ELECTRICAL CONTINUITY AND COATED WITH RUST-INHIBITIVE PAINT. NO RESISTANCE WILL BE PERMISSIBLE ACROSS ANY JOINT.
- ALL SEWER MAINS SHALL BE P.V.C. UNLESS OTHERWISE NOTED (HOWARD COUNTY SDR 35 PVC).
- TOP OF ALL WATER MAINS SHALL HAVE A MINIMUM OF 3-1/2 FEET OF COVER UNLESS OTHERWISE NOTED.
- ALL FIRE HYDRANTS SHALL BE RESTRAINED AND BUTTRESSED WITH CONCRETE IN ACCORDANCE WITH HOWARD COUNTY STANDARD DETAIL W 2.11. SOIL AROUND THE FIRE HYDRANT SHALL BE COMPACTED IN ACCORDANCE WITH THE SPECIFICATIONS.
- FOR UTILITY CROSSINGS, CLEAR ALL UTILITIES BY A MINIMUM OF 1 FOOT, UNLESS OTHERWISE NOTED.
- THE CONTRACTOR SHALL PROVIDE A JOINT IN ALL STORM DRAIN AND SANITARY MAINS WITHIN 2'-0" OF THE EXTERIOR MANHOLE WALL.
- STORMWATER MANAGEMENT PONDS ON THE SITE SHALL BE PRIVATELY OWNED AND MAINTAINED. (F-02-40, F-04-133)
- THE CONTRACTOR SHALL PERMANENTLY STABILIZE AND SEED ALL DISTURBED AREAS THAT ARE NOT TO BE PAVED.
- ALL DRIVEWAYS ARE PRIVATELY OWNED AND MAINTAINED.
- THE CONTRACTOR SHALL TAKE PROPER PRECAUTIONS SO AS NOT TO DAMAGE EXISTING ADJACENT FACILITIES AND STRUCTURES. THE CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS TO THEIR ORIGINAL CONDITION OR BETTER, UNLESS NOTED OTHERWISE.
- ACCESS TO ALL EXISTING FACILITIES SHALL BE MAINTAINED AT ALL TIMES.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE OWNER OF ANY DEVIATION FROM THESE PLANS PRIOR TO ANY CHANGES. ANY DEVIATION FROM THESE PLANS WITHOUT WRITTEN AUTHORIZATION BY THE OWNER WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- SURFACED STREETS AND PARKING AREAS SHALL BE MAINTAINED IN A CLEAN CONDITION, MUD AND DUST FREE AT ALL TIMES.
- THE CONTRACTOR SHALL MAKE EVERY ATTEMPT TO MINIMIZE DAMAGE TO EXISTING TREES DURING CONSTRUCTION.
- EXISTING SIGNS, GUARDRAILS AND OTHER MINOR SITE FEATURES IN THE LIMIT OF PROPOSED CONSTRUCTION, WHETHER OR NOT SHOWN ON THESE PLANS, SHALL BE REMOVED AND REPLACED AT NO ADDITIONAL COST TO THE OWNER.
- SEE DETAIL SHEETS FOR OTHER ITEMS THAT APPLY TO THIS PROJECT.
- PROPOSED DISTURBANCE TO STEEP SLOPES OVER 25% IN GRADE AND OVER 20,000 SF IN AREA, AS SHOWN IN THIS PLAN IS CONSIDERED "NECESSARY" IN ACCORDANCE WITH SECTION 16.166.C OF THE HOWARD COUNTY SUBDIVISION REGULATIONS.

40. A building permit for the proposed equipment pad and retaining wall shall be applied for within one year measured from the DEB approval letter for this redline revision, August 26, 2008.

COORDINATES ARE BASED ON THE MARYLAND STATE COORDINATE SYSTEM (NAD 83/91) AND ARE DERIVED FROM THE FOLLOWING JOHN HOPKINS UNIVERSITY CONTROL STATIONS:

STATION	NORTH	EAST
HOPKINS	544836.5300	1340825.3542
G12	550256.5002	1342325.2642
G8	549478.7005	1341170.4345
G7	548107.0328	1341025.0830
41EA	544825.8093	1339217.4439



NO.	DESCRIPTION	DATE
1	BUILDING 30 AS-BUILT COND	8-2-12
2	BUILDING 30	12-14-09
3	Added Ret. Wall #1 & #2 for Building 30	07-15-09
4	RETAINING WALL DETAIL	10/25/05
5	BID SET	3/24/05

THE JOHN HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
JOHN HOPKINS ROAD
LAUREL MARYLAND 20723-6009

SYSTEMS INTEGRATION BUILDINGS AND VAN PAD
SDP SET

JHU/APL INTERNAL USE

THIS DATA SHALL NOT BE DISCLOSED TO A THIRD PARTY AND SHALL NOT BE DUPLICATED, USED, OR DISCLOSED IN WHOLE OR IN PART FOR ANY PURPOSE OTHER THAN TO EVALUATE THIS SET OR IN THE CASE OF A CONTRACT AWARD, TO PERFORM THE WORK REQUIRED HEREUNDER, WITHOUT THE EXPRESS WRITTEN CONSENT OF JHU/APL.

GRAPHIC SCALES

NOTE: THIS SDP IS A REVISION TO PREVIOUSLY APPROVED REVISION A AND REFLECTS THE AS-BUILT CONDITIONS FOR BUILDING 30 SITE AND UTILITIES. THE DRAWINGS REVISED INCLUDE COOL, C119, C121, C126, C128, C205A, SUPPLEMENTAL DRAWINGS C211A, C212A, C205B HAVE BEEN ADDED TO THE SET.

WRA
WHITMAN, REQUARDT AND ASSOCIATES, LLP
801 S. CAROLINE STREET
BALTIMORE, MARYLAND 21231
410 - 235 - 3450

COVER SHEET

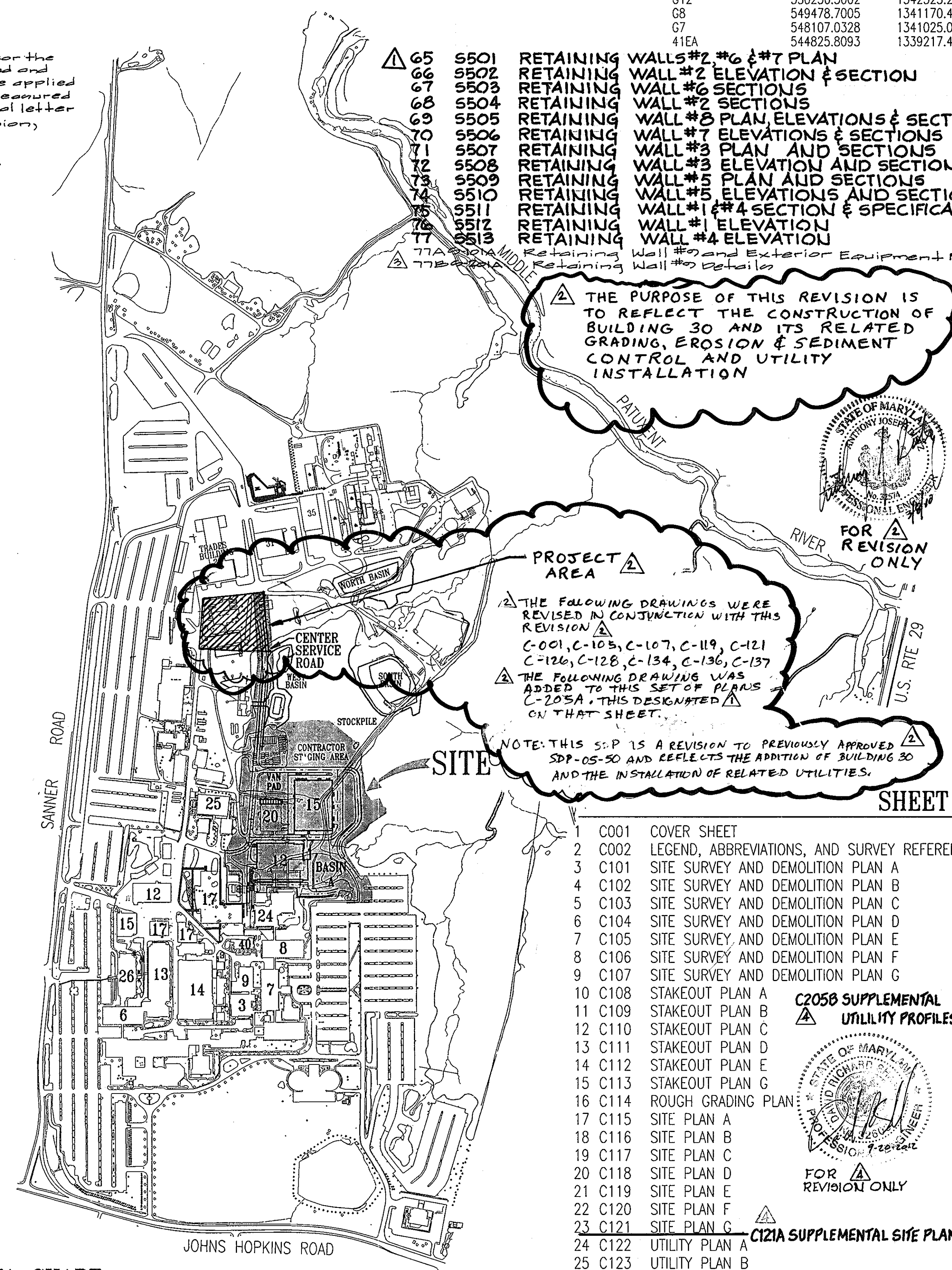
DRAWING NO. **C001**

Sheet 1 of 33

Scale: AS SHOWN

Designed By: R.B.C. Drawn By: C.J.K.

Checked By: A.U.O. Date: 03/25/05



THE PURPOSE OF THIS REVISION IS TO REFLECT THE CONSTRUCTION OF BUILDING 30 AND ITS RELATED GRADING, EROSION & SEDIMENT CONTROL AND UTILITY INSTALLATION

THE FOLLOWING DRAWINGS WERE REVISED IN CONSTRUCTION WITH THIS REVISION:
C-001, C-105, C-107, C-119, C-121, C-126, C-128, C-134, C-136, C-137

THE FOLLOWING DRAWING WAS ADDED TO THIS SET OF PLANS: C-205A. THIS DESIGNATED ON THAT SHEET.

NOTE: THIS SDP IS A REVISION TO PREVIOUSLY APPROVED SDP-05-50 AND REFLECTS THE ADDITION OF BUILDING 30 AND THE INSTALLATION OF RELATED UTILITIES.

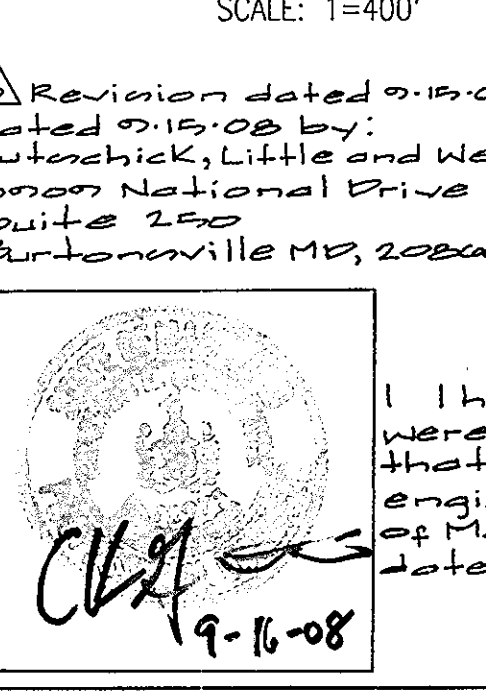
SHEET INDEX

1	C001	COVER SHEET	36	C134	EROSION AND SEDIMENT CONTROL PLAN E
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12	C110	STAKEOUT PLAN C	47	C207	STORM DRAIN PROFILES
13	C111	STAKEOUT PLAN D	48	C208	STORM DRAIN PROFILES
14	C112	STAKEOUT PLAN E	49	C209	STORM DRAIN PROFILES
15	C113	STAKEOUT PLAN G	50	C210	STORM DRAIN PROFILES
16	C114	ROUGH GRADING PLAN	51	C211	STORM DRAIN SCHEDULES
17	C115	SITE PLAN A	52	C212	SANITARY SEWER PROFILES
18	C116	SITE PLAN B	53	C213	SANITARY SEWER PROFILES
19	C117	SITE PLAN C	54	C214	SANITARY SEWER PROFILES
20	C118	SITE PLAN D	C215	COMMUNICATION DUCTBANK PROFILES	
21	C119	SITE PLAN E	C216	ELECTRICAL DUCTBANK PROFILES	
22	C120	SITE PLAN F	C217	COMMUNICATION/ELEC. DUCTBANK PROFILES	
23	C121	SITE PLAN G	C218	HOT/CHILLED WATER PROFILES	
24	C122	UTILITY PLAN A	C219	WATER PROFILES	
25	C123	UTILITY PLAN B	C220	WATER PROFILES	
26	C124	UTILITY PLAN C	55	C401	ENLARGED PLAN VIEWS
27	C125	UTILITY PLAN D	56	C501	DETAILS
28	C126	UTILITY PLAN E	57	C502	DETAILS
29	C127	UTILITY PLAN F	58	C503	DETAILS
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32	C130	EROSION AND SEDIMENT CONTROL PLAN A	61	C603	EROSION AND SEDIMENT CONTROL NOTES B
33	C131	EROSION AND SEDIMENT CONTROL PLAN B	62	L101	LANDSCAPE PLAN A
34	C132	EROSION AND SEDIMENT CONTROL PLAN C	63	L102	LANDSCAPE PLAN B
35	C132	EROSION AND SEDIMENT CONTROL PLAN D	64	L501	LANDSCAPE DETAILS

SITE ANALYSIS DATA CHART

TOTAL PROJECT AREA: 361 Ac. +/-	EXISTING BUILDING COVERAGE = 22.7 ACRES (SDP 05-043)
AREA OF PLAN SUBMISSION: 14.8 Ac. +/-	(6.3% OF TOTAL LOT AREA)
LIMIT OF DISTURBANCE: 14.8 Ac. +/-	PROPOSED BUILDING COVERAGE = 25.5 ACRES
PRESENT ZONING: PEC	(7.1% OF TOTAL LOT AREA)
PROPOSED USE: RESEARCH FACILITY	BLDG 12 (SI-1) = 1.6 ACRES, BLDG 15 (SI-2) = 1.24 ACRES
MAXIMUM NUMBER OF NEW EMPLOYEES: 375	EXISTING MAXIMUM NUMBER OF NEW EMPLOYEES: 4600
375 EMPLOYEES SI-1 = 300 AND SI-2 = 75	EXISTING MAXIMUM NUMBER OF PARKING SPACES REQUIRED
BY ZONING: 2450 (SDP 99-11)	EXISTING ONSITE PARKING SPACES: 4815 (SDP 05-043)
PROPOSED ONSITE PARKING SPACES: 4798	PROPOSED EMPLOYEE PARKING SPACES: 4798
EXISTING OPEN SPACE AREA = (LOT AREA MINUS PARKING & BUILDINGS)	283.6 ACRES, 78.6% OF TOTAL LOT AREA (SDP 05-043)
PROPOSED OPEN SPACE AREA = 278.2 ACRES, 77.1% OF TOTAL LOT AREA	

LOCATION PLAN



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK 4/20/05

CHIEF, DIVISION OF LAND DEVELOPMENT 4/16/05

4/22/05

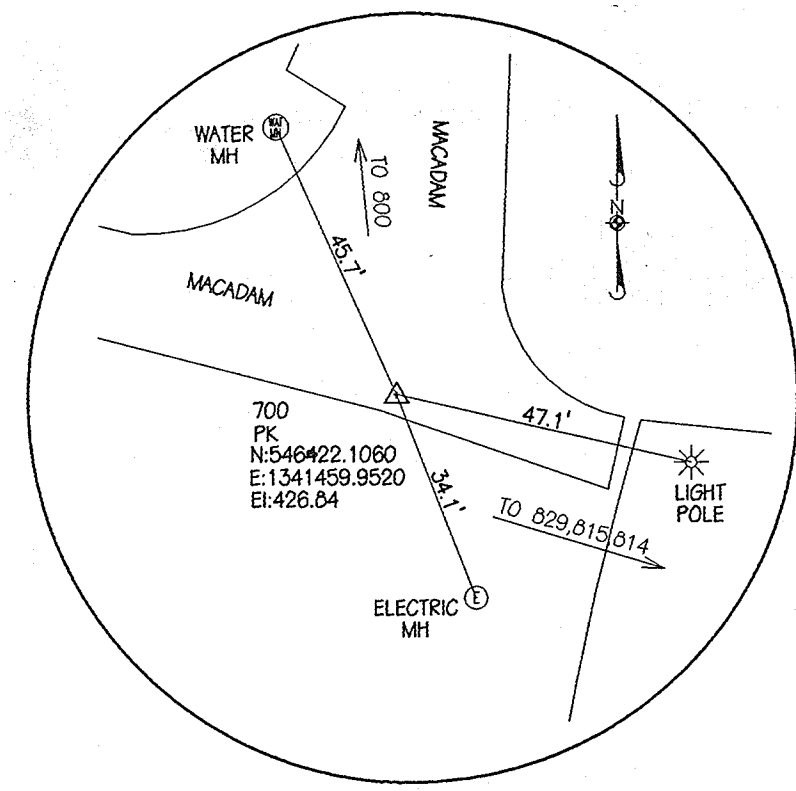
Professional Certification
I hereby certify that these documents were prepared or approved by me, and that I am duly licensed professional engineer under the laws of the State of Maryland, license No. 12975, expiration date May 26, 2010.

OWNER: THE JOHN HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY 11100 JOHN HOPKINS ROAD LAUREL, MARYLAND 20723 ATTN: MR. JAMES LOESCH VOICE (443) 778-5134 FAX (443) 778-6122

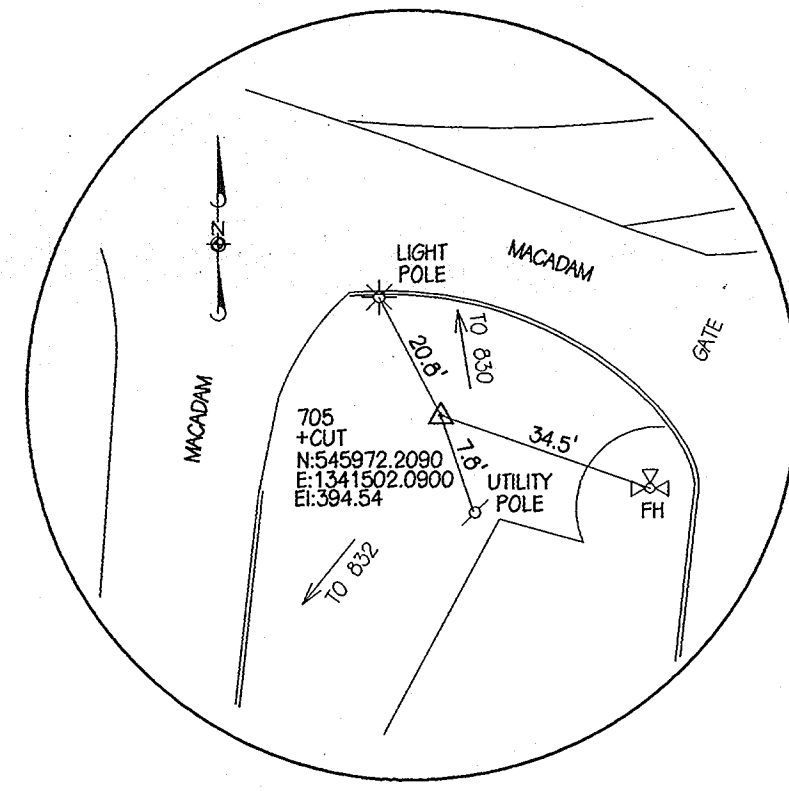
PERMIT INFORMATION CHART

OWNER:	WATER CODE: E-21	SEWER CODE: 6480000	BUILDING: N/A	STREET ADDRESS: N/A
PARCEL 1:	SUBDIVISION NAME: JOHN HOPKINS UNIVERSITY PROPERTY (APPLIED PHYSICS LABORATORY SITE)		SECTION/AREA: N/A	PARCEL 1
PLAT 17042-17046	FOREST CONSP. PLAT E-04-188	ZONE PEC	TAX MAP BLOCK 41	ELEC. DIST. 11
	GRID #18		CENSUS TRACT 605102	

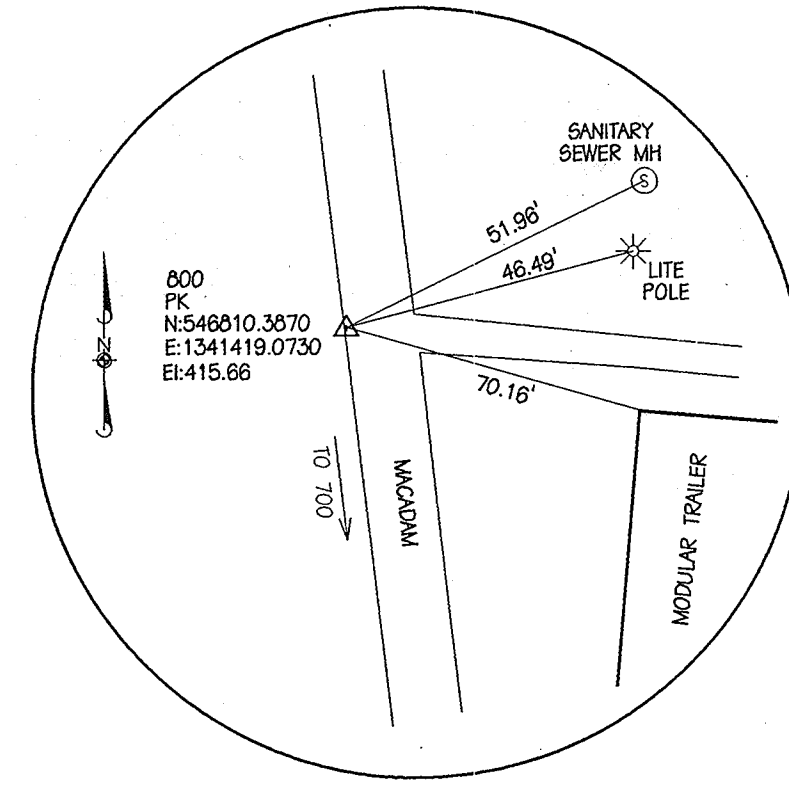
SDP-05-50



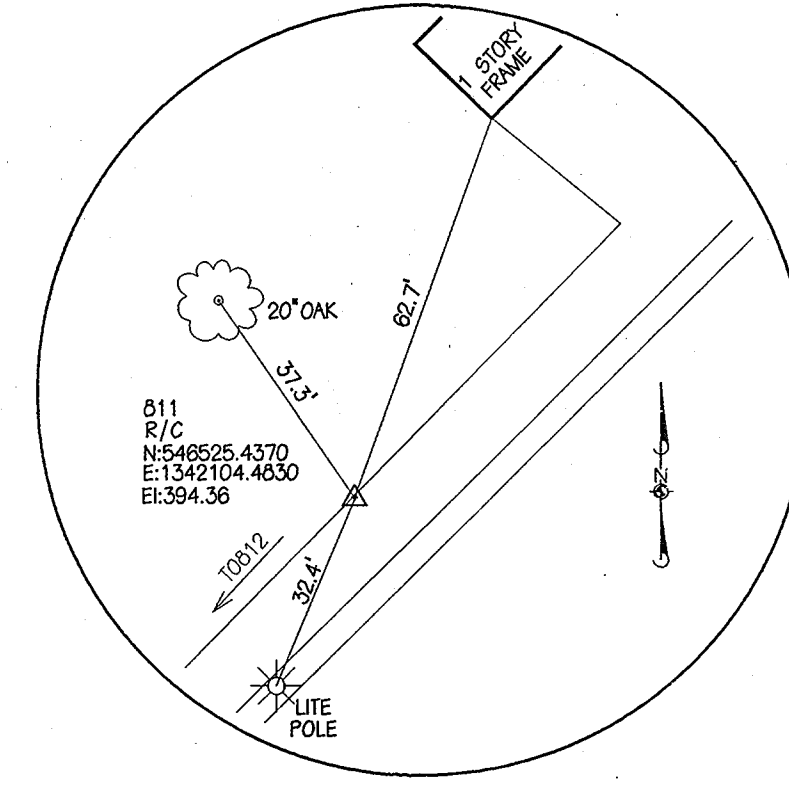
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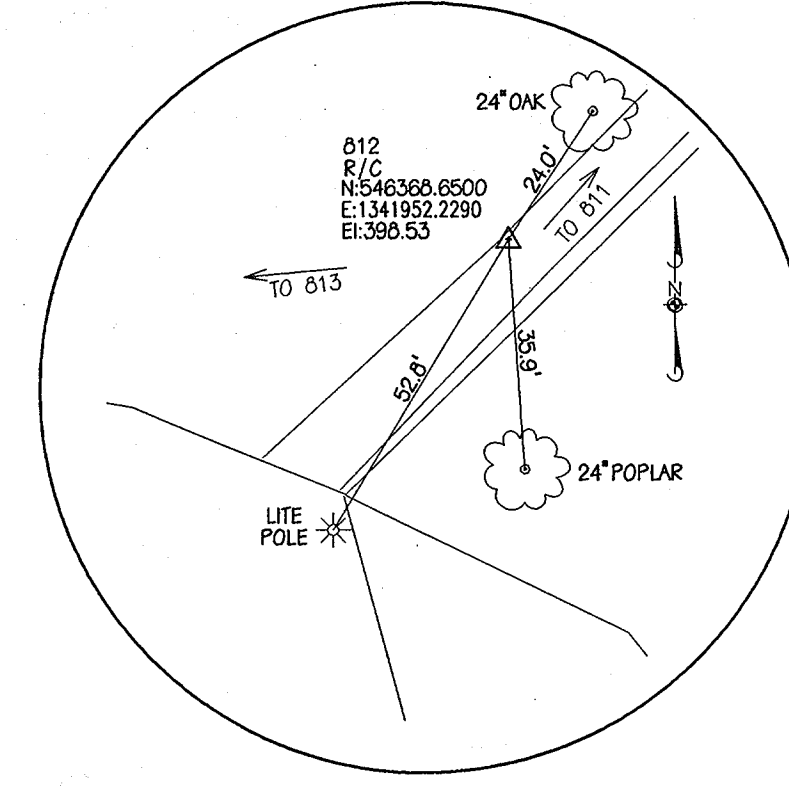
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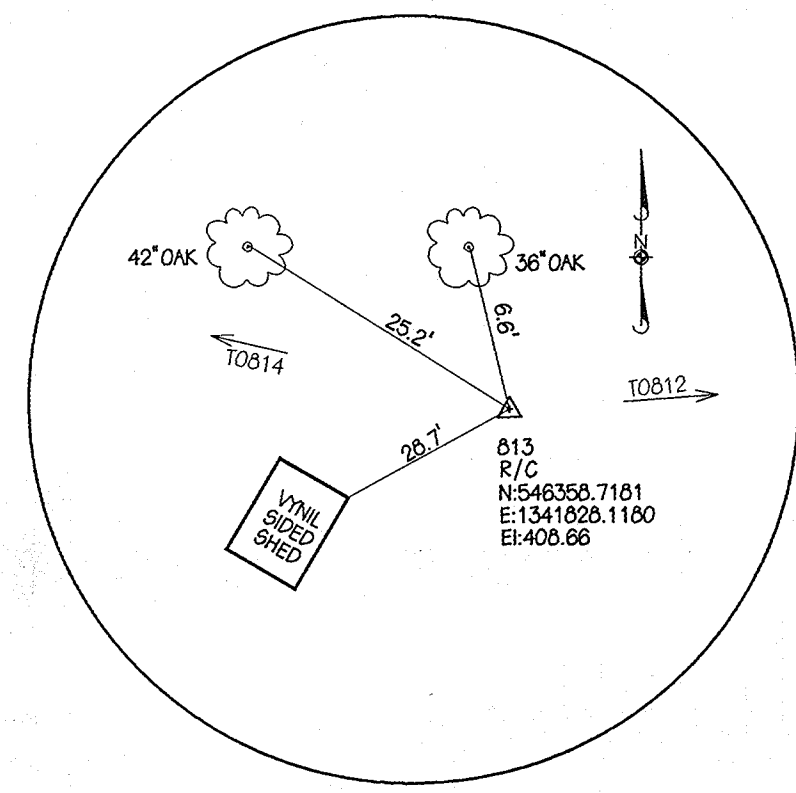
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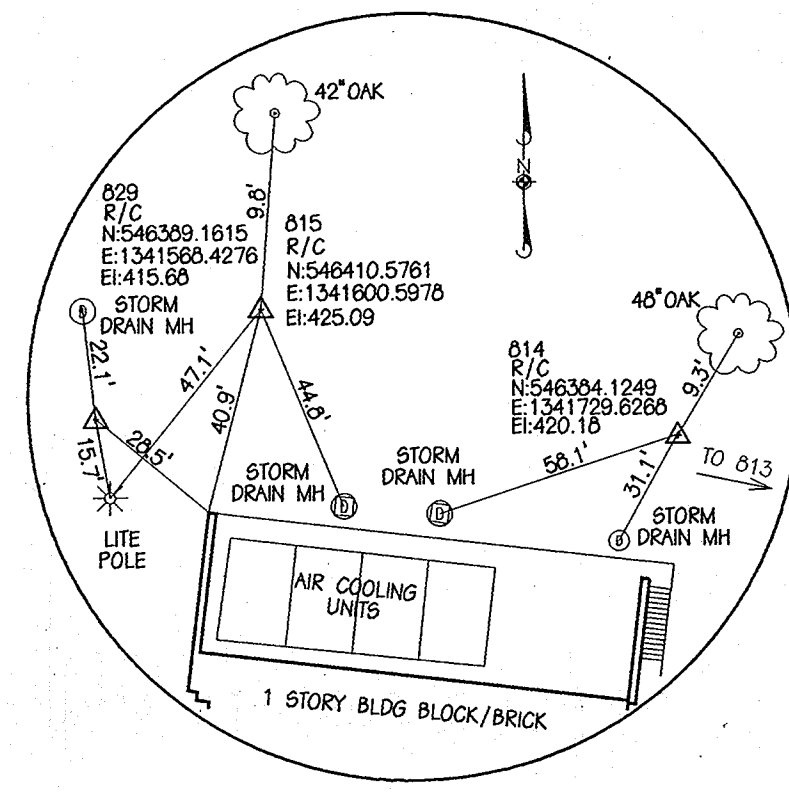
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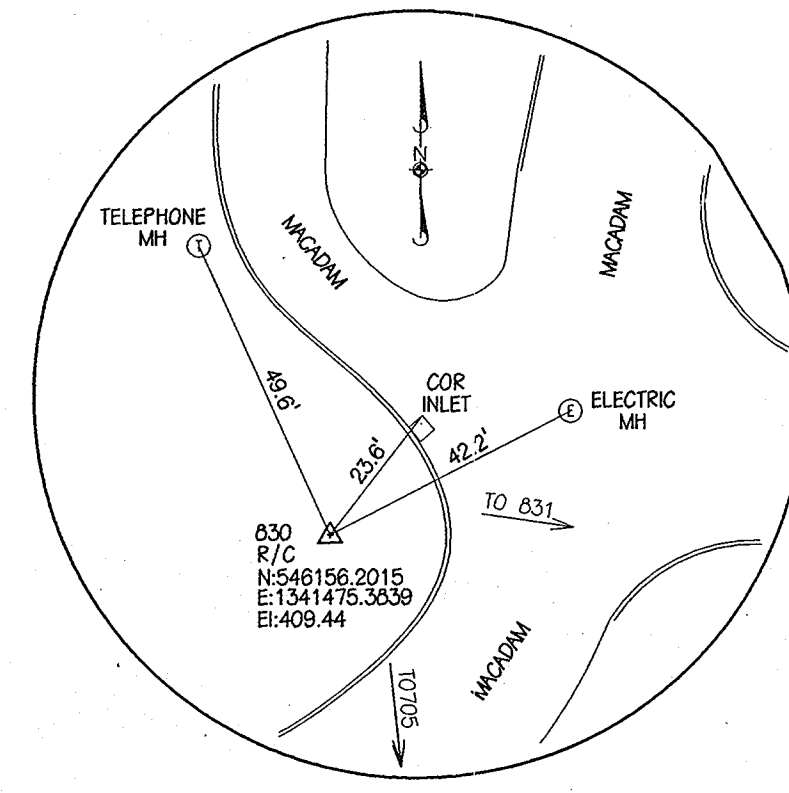
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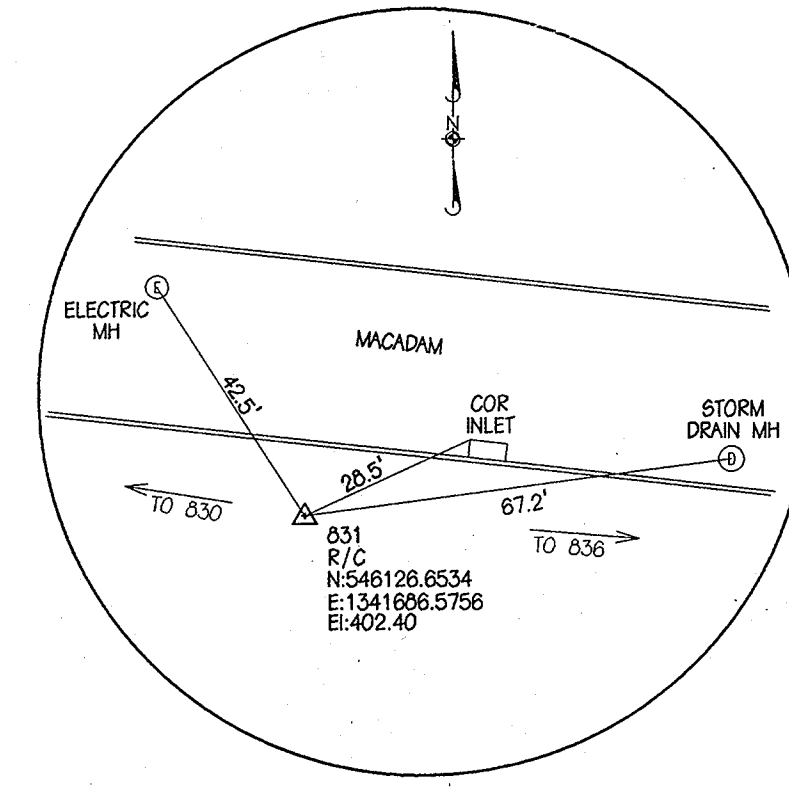
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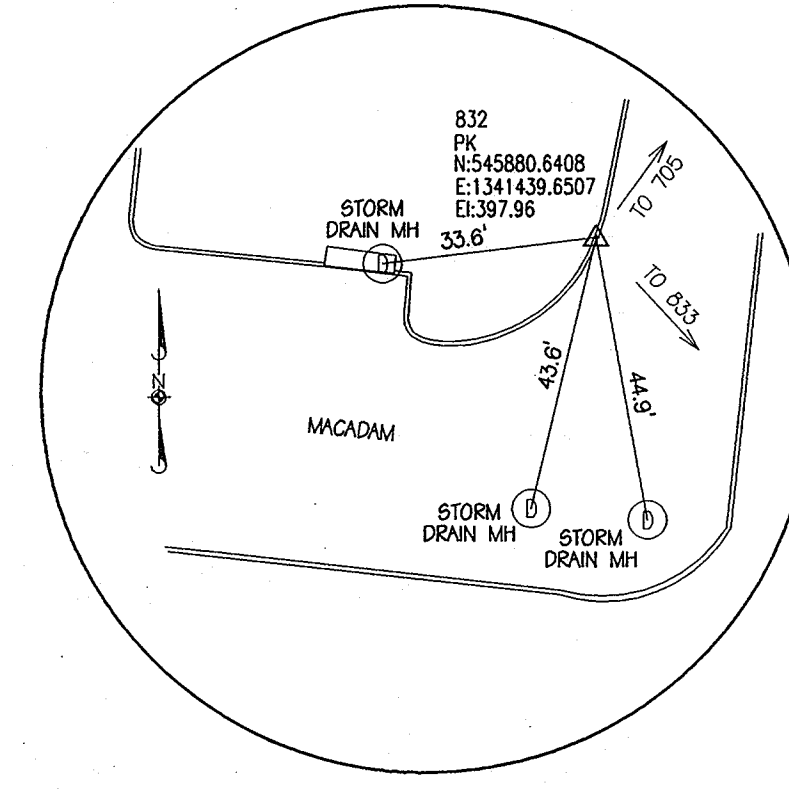
PI 814, PI 815, PI 829



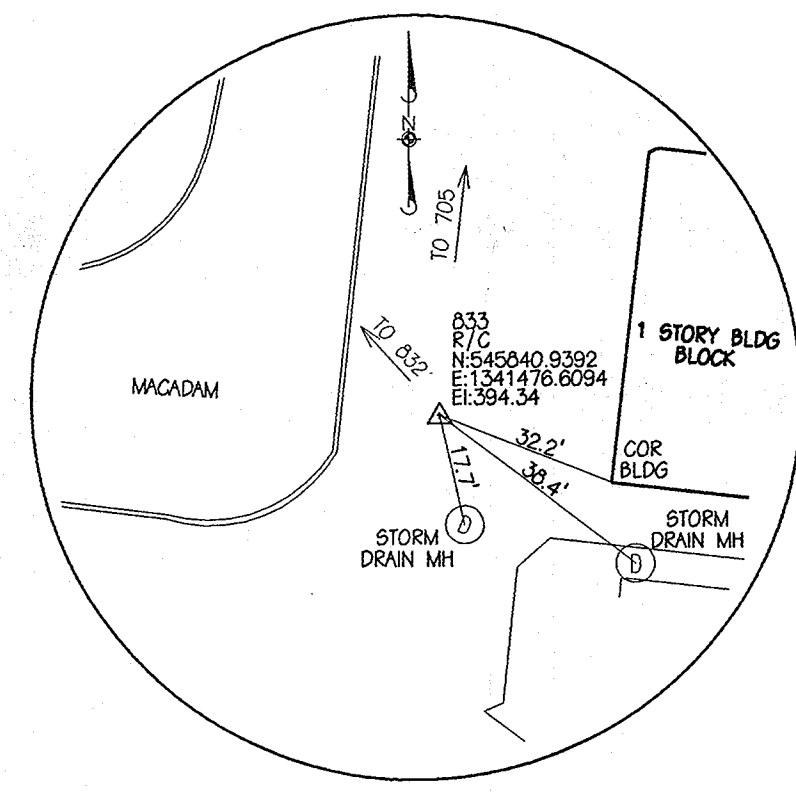
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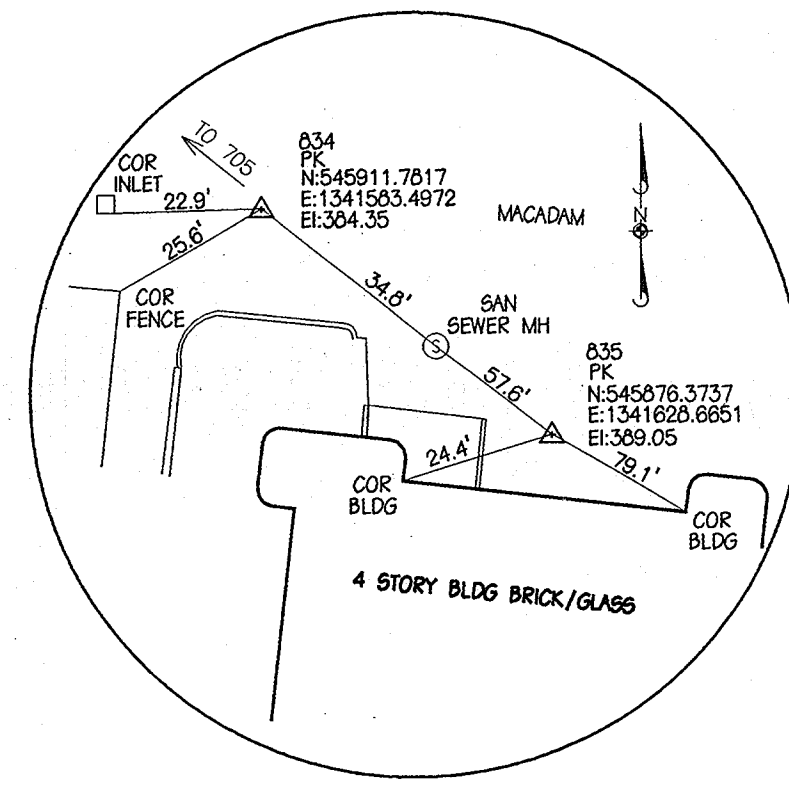
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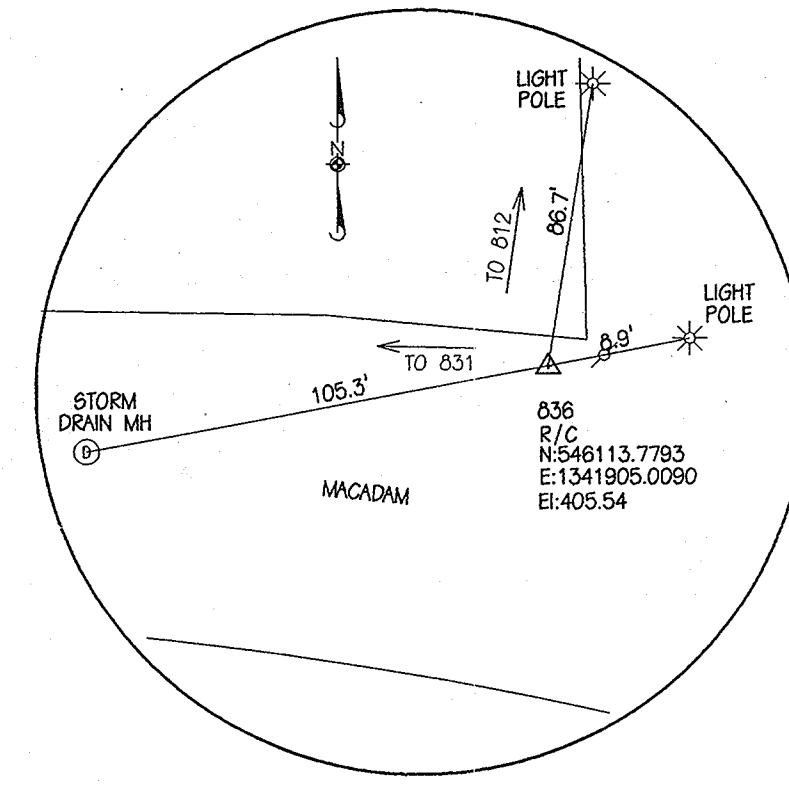
PI 832



PI 833



PI 834, PI 835



PI 836

ABBREVIATIONS

ABAND	ABANDON
APPROX	APPROXIMATELY
BC	BOTTOM OF CURB
BIT	BITUMINOUS
BLDG	BUILDING
B.M.	BENCH MARK
BOIT	BOTTOM
C/L	CENTERLINE
CONC	CONCRETE
CMP	CORRUGATED METAL PIPE
DIP	DUCTILE IRON PIPE
DEMO	DEMOLITION
DWG, DRWG	DRAWING
E	EAST
EL	ELECTRICAL
ELEV	ELEVATION
EX, EXIST	EXISTING
EXP JT	EXPANSION JOINT
FH	FIRE HYDRANT
FF	FIRST FLOOR
FEET	FEET
HO. CO.	HOWARD COUNTY
HW	HEADWALL
IN	INCH
INV	INVERT
LF	LINEAR FEET
MAC	MACADAM
MH	MANHOLE
MAX	MAXIMUM
MIN	MINIMUM
N	NORTH
N.T.S.	NOT TO SCALE
PVMT	PAVEMENT
PK	PK NAIL
PP	POWER POLE
RD	ROOF DRAIN
SAN	SANITARY
SHT	SHEET
SC	STORM SECTOR
SD	STORM DRAIN
S	SOUTH
TC	TOP OF CURB
T/G	TOP OF GRATE
T/C	TOP OF COVER
TELE	TELEPHONE
TYP	TYPICAL
TW	TOP OF WALL
UG	UNDERGROUND
UC	UNDERGROUND COMMUNICATION
UE	UNDERGROUND ELECTRIC DUCT
UT	UNDERGROUND TELEPHONE DUCT
UMH	UNKNOWN MANHOLE
W	WEST, WATER

SURVEY LEGEND

	CONTOURS
	GPS TRAVERSE STATION
	TRAVERSE STATION
	DECIDUOUS TREE
	CONIFEROUS TREE
	BUSH
	STORM DRAIN MANHOLE
	SAN. SEWER MANHOLE
	SAN. CLEANOUT
	FIRE HYDRANT
	WATER METER
	WATER VALVE
	LIGHT POLE
	UTILITY POLE
	GUY WIRE
	ELECTRIC MANHOLE
	ELECTRIC JUNCTION BOX
	TRANSFORMER
	UNKNOWN VALVE
	UNKNOWN MANHOLE
	BOLLARD
	RIP RAP

DEMOLITION LEGEND

	REMOVE EXISTING TREE
	REMOVE EXISTING BRUSH/SHRUB
	REMOVE EXISTING LIGHT POLE
	REMOVE EXISTING UTILITY POLE
	REMOVE EXISTING UTILITY STRUCTURE
	REMOVE EXISTING SIGN
	REMOVE EXISTING FENCE
	REMOVE EXISTING STORM DRAIN
	REMOVE EXISTING SANITARY SEWER
	ABANDON EXISTING SANITARY SEWER
	EXISTING BUILDING TO BE REMOVED
	REMOVE EXISTING PAVEMENT
	MILL EXISTING PAVEMENT
	REMOVE EXISTING MISCELLANEOUS STRUCTURES
	EXISTING SLOPES - 15 TO 25%
	EXISTING SLOPES - GREATER THAN 25%
	EXISTING STEEP SLOPES - GREATER THAN 25% AND 20,000 SF
	25904 S.F.
	SEE DEMOLITION NOTE #1
	BORING

STAKEOUT, SITE, UTILITY LEGEND

EXISTING	PROPOSED	DESCRIPTION
		CONTOUR
		SPOT ELEVATION
		FIRE HYDRANT
		STORM DRAIN
		WATER
		SANITARY
		GAS
		UNDERGROUND ELECTRIC
		UNDERGROUND TELEPHONE
		MANHOLE/INLET
		TREE LINE
		BUILDINGS
		CURB AND GUTTER
		P-4 BITUMINOUS PAVING
		CONCRETE PAVING
		STONE PAVING
		CLEAN OUT
		FENCE

ADD RETAINING WALL SHEETS		10/25/05
G	BID SET	3/24/05

THE JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
 JOHNS HOPKINS ROAD
 LAUREL MARYLAND 20723-6099

SYSTEMS INTEGRATION BUILDINGS AND VAN PAD

SDP SET

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GRAPHIC SCALES

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WR&A
 WHITMAN, REQUARD AND ASSOCIATES, LLP
 801 S. CAROLINE STREET
 BALTIMORE, MARYLAND 21231
 410 - 235 - 3450

LEGEND, ABBREVIATIONS, AND SURVEY REFERENCE

	DRAWING NO.
	C002
Sheet 2 of 77	
Scale: AS SHOWN	
Designed By: R.B.C.	Drawn By: C.J.K.
Checked By: A.U.O.	Date: 03/25/05

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 4/20/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE

[Signature] 4/14/05
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 4/22/05
 DIRECTOR DATE

MARYLAND STATE COORDINATES
NAD 83 (97)

ADD RETAINING WALL SHEETS	10/25/05
G BID SET	3/24/05

THE JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
JOHNS HOPKINS ROAD
LAUREL MARYLAND 20723-6099

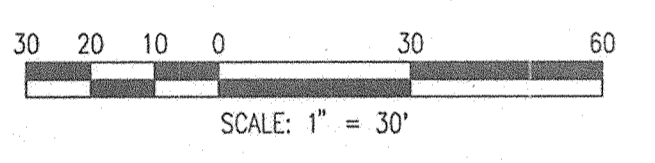


SYSTEMS INTEGRATION BUILDINGS AND VAN PAD

SDP SET

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GRAPHIC SCALES



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801 S. CAROLINE STREET
BALTIMORE, MARYLAND 21231
410 - 235 - 3450

SITE SURVEY AND DEMOLITION PLAN 'A'

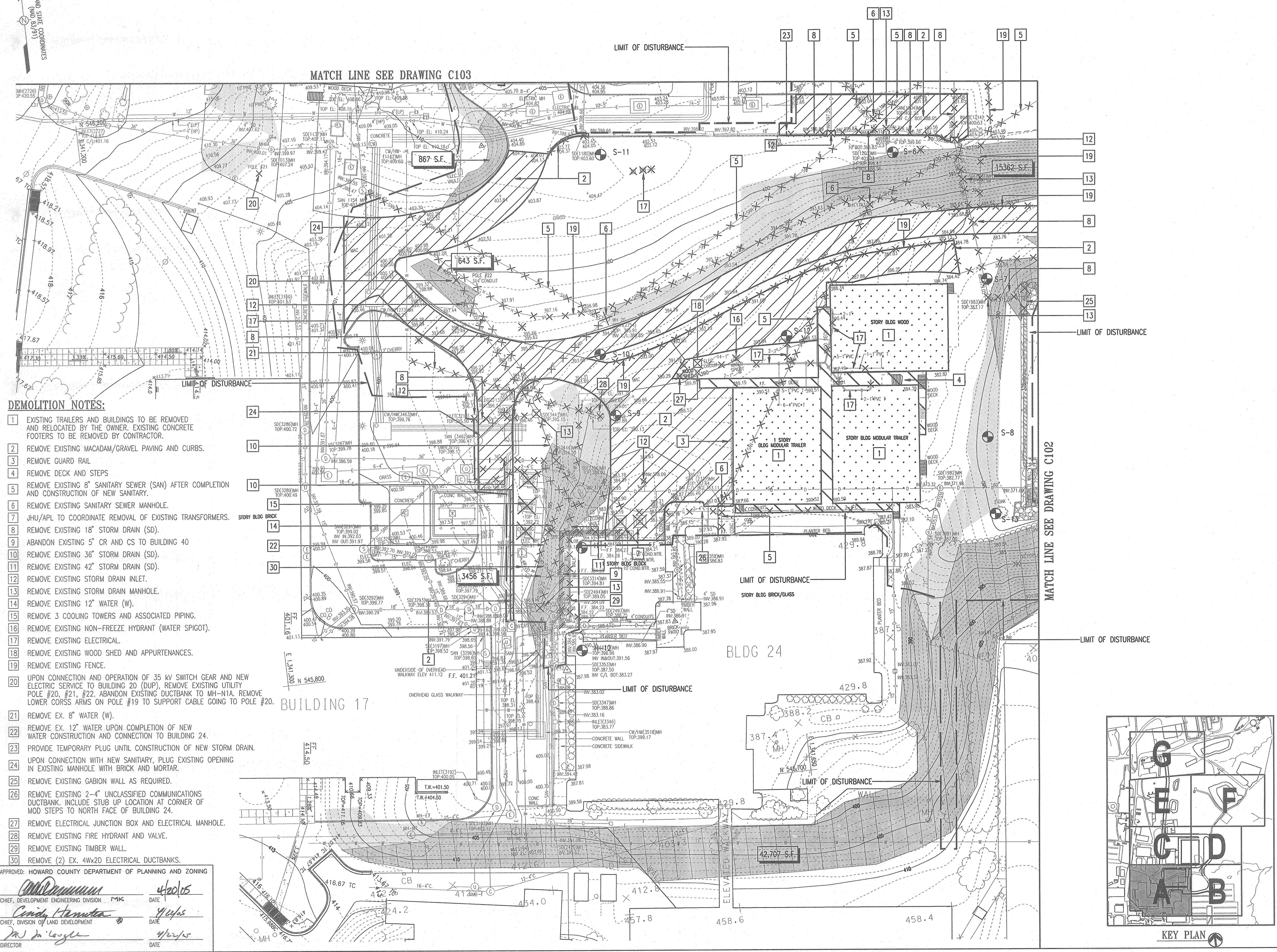
DRAWING NO. C101

Sheet 3 of 77

Scale: 1"=30'

Designed By: R.B.C. Drawn By: C.J.K.

Checked By: A.U.O. Date: 03/25/05



DEMOLITION NOTES:

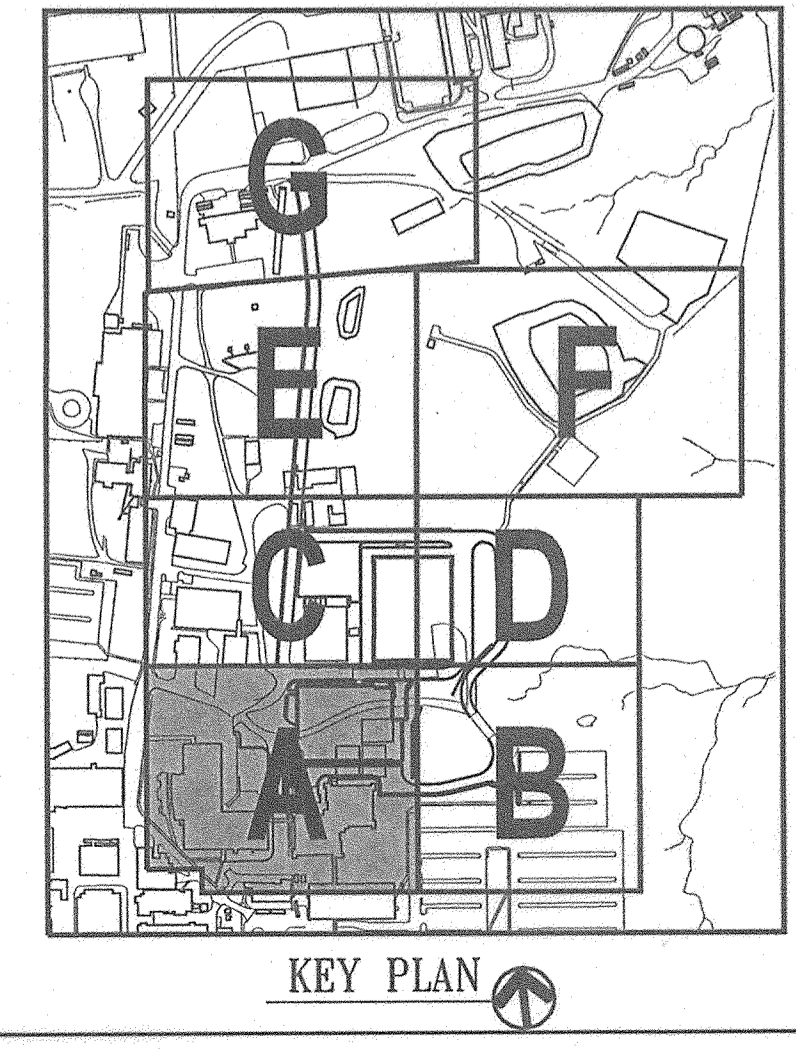
- 1 EXISTING TRAILERS AND BUILDINGS TO BE REMOVED AND RELOCATED BY THE OWNER. EXISTING CONCRETE FOOTERS TO BE REMOVED BY CONTRACTOR.
- 2 REMOVE EXISTING MACADAM/GRAVEL PAVING AND CURBS.
- 3 REMOVE GUARD RAIL
- 4 REMOVE DECK AND STEPS
- 5 REMOVE EXISTING 8" SANITARY SEWER (SAN) AFTER COMPLETION AND CONSTRUCTION OF NEW SANITARY.
- 6 REMOVE EXISTING SANITARY SEWER MANHOLE.
- 7 JHU/APL TO COORDINATE REMOVAL OF EXISTING TRANSFORMERS.
- 8 REMOVE EXISTING 18" STORM DRAIN (SD).
- 9 ABANDON EXISTING 5" CR AND CS TO BUILDING 40
- 10 REMOVE EXISTING 36" STORM DRAIN (SD).
- 11 REMOVE EXISTING 42" STORM DRAIN (SD).
- 12 REMOVE EXISTING STORM DRAIN INLET.
- 13 REMOVE EXISTING STORM DRAIN MANHOLE.
- 14 REMOVE EXISTING 12" WATER (W).
- 15 REMOVE 3 COOLING TOWERS AND ASSOCIATED PIPING.
- 16 REMOVE EXISTING NON-FREEZE HYDRANT (WATER SPIGOT).
- 17 REMOVE EXISTING ELECTRICAL.
- 18 REMOVE EXISTING WOOD SHED AND APPURTENANCES.
- 19 REMOVE EXISTING FENCE.
- 20 UPON CONNECTION AND OPERATION OF 35 kV SWITCH GEAR AND NEW ELECTRIC SERVICE TO BUILDING 20 (DUP), REMOVE EXISTING UTILITY POLE #20, #21, #22. ABANDON EXISTING DUCTBANK TO MH-N1A. REMOVE LOWER CORSS ARMS ON POLE #19 TO SUPPORT CABLE GOING TO POLE #20.
- 21 REMOVE EX. 8" WATER (W).
- 22 REMOVE EX. 12" WATER UPON COMPLETION OF NEW WATER CONSTRUCTION AND CONNECTION TO BUILDING 24.
- 23 PROVIDE TEMPORARY PLUG UNTIL CONSTRUCTION OF NEW STORM DRAIN.
- 24 UPON CONNECTION WITH NEW SANITARY, PLUG EXISTING OPENING IN EXISTING MANHOLE WITH BRICK AND MORTAR.
- 25 REMOVE EXISTING GABION WALL AS REQUIRED.
- 26 REMOVE EXISTING 2-4" UNCLASSIFIED COMMUNICATIONS DUCTBANK. INCLUDE STUB UP LOCATION AT CORNER OF MOD STEPS TO NORTH FACE OF BUILDING 24.
- 27 REMOVE ELECTRICAL JUNCTION BOX AND ELECTRICAL MANHOLE.
- 28 REMOVE EXISTING FIRE HYDRANT AND VALVE.
- 29 REMOVE EXISTING TIMBER WALL.
- 30 REMOVE (2) EX. 4Wx2D ELECTRICAL DUCTBANKS.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 4/20/05
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 4/24/05
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 4/22/05
DIRECTOR DATE



SDP-05-50

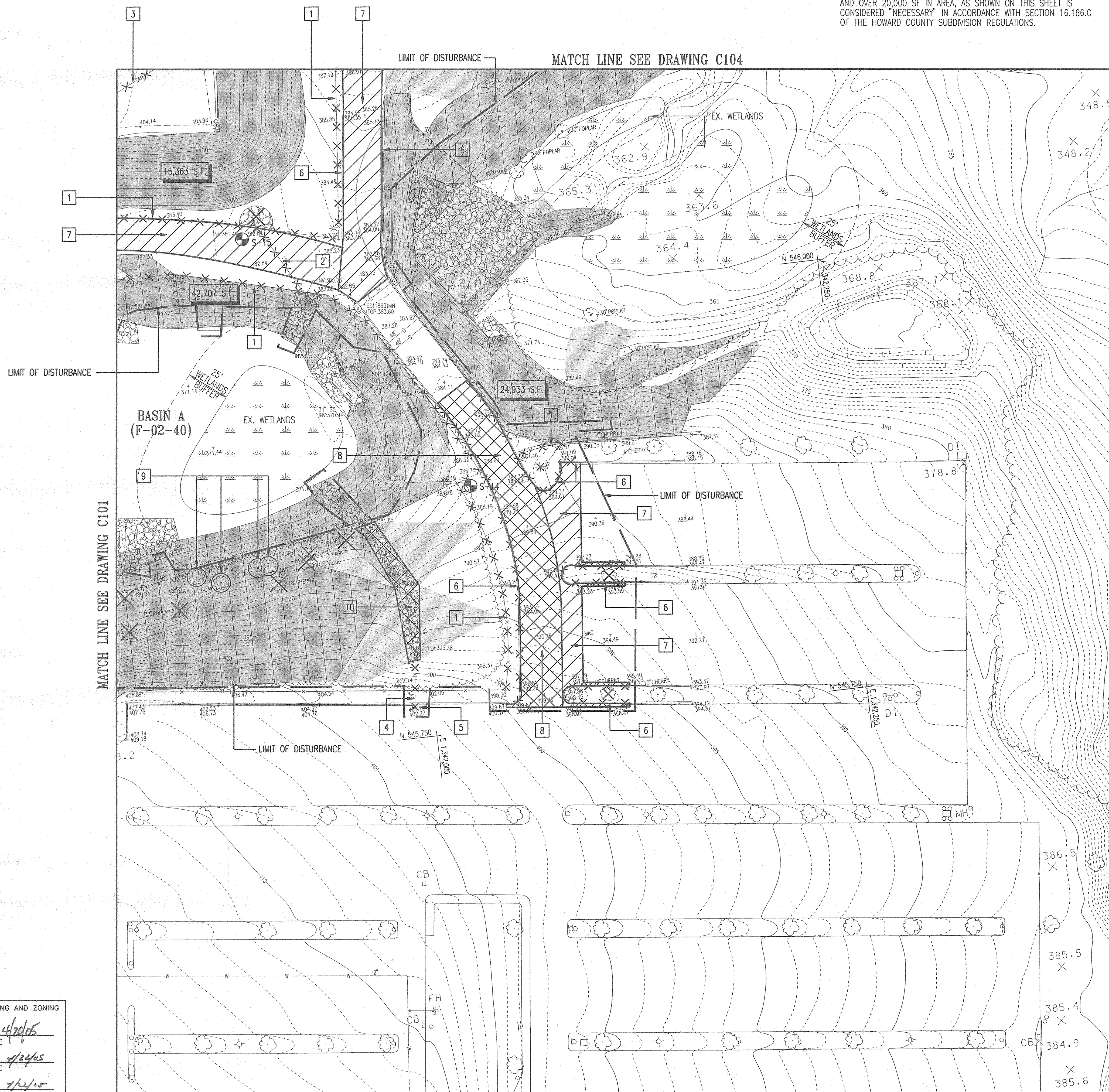
MARYLAND STATE COORDINATES
(NAD 83/91)

NOTE:
PROPOSED DISTURBANCE TO STEEP SLOPES OVER 25% IN GRADE AND OVER 20,000 SF IN AREA, AS SHOWN ON THIS SHEET IS CONSIDERED "NECESSARY" IN ACCORDANCE WITH SECTION 16.166.C OF THE HOWARD COUNTY SUBDIVISION REGULATIONS.

DEMOLITION NOTES:

- 1 REMOVE EXISTING FENCE.
- 2 REMOVE EXISTING 12" STORM DRAIN (SD).
- 3 REMOVE EXISTING 8" SANITARY SEWER (SAN).
- 4 REMOVE EXISTING 24" STORM DRAIN (SD).
- 5 REMOVE EXISTING STORM DRAIN INLET.
- 6 REMOVE EXISTING CURB AND GUTTER.
- 7 REMOVE EXISTING MACADAM/GRAVEL PAVEMENT.
- 8 MILL EXISTING MACADAM PAVEMENT.
- 9 PROTECT EXISTING TREES.
- 10 REMOVE EXISTING RIPRAP.

ADD RETAINING WALL SHEETS 10/25/05
G BID SET 3/24/05



MATCH LINE SEE DRAWING C101

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LAUREL MARYLAND 20723-6099

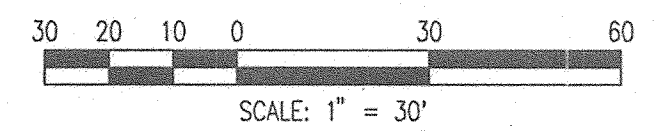


SYSTEMS INTEGRATION BUILDINGS AND VAN PAD

SDP SET

JHU/APL INTERNAL USE
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GRAPHIC SCALES



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BALTIMORE, MARYLAND 21231
410 - 235 - 3450

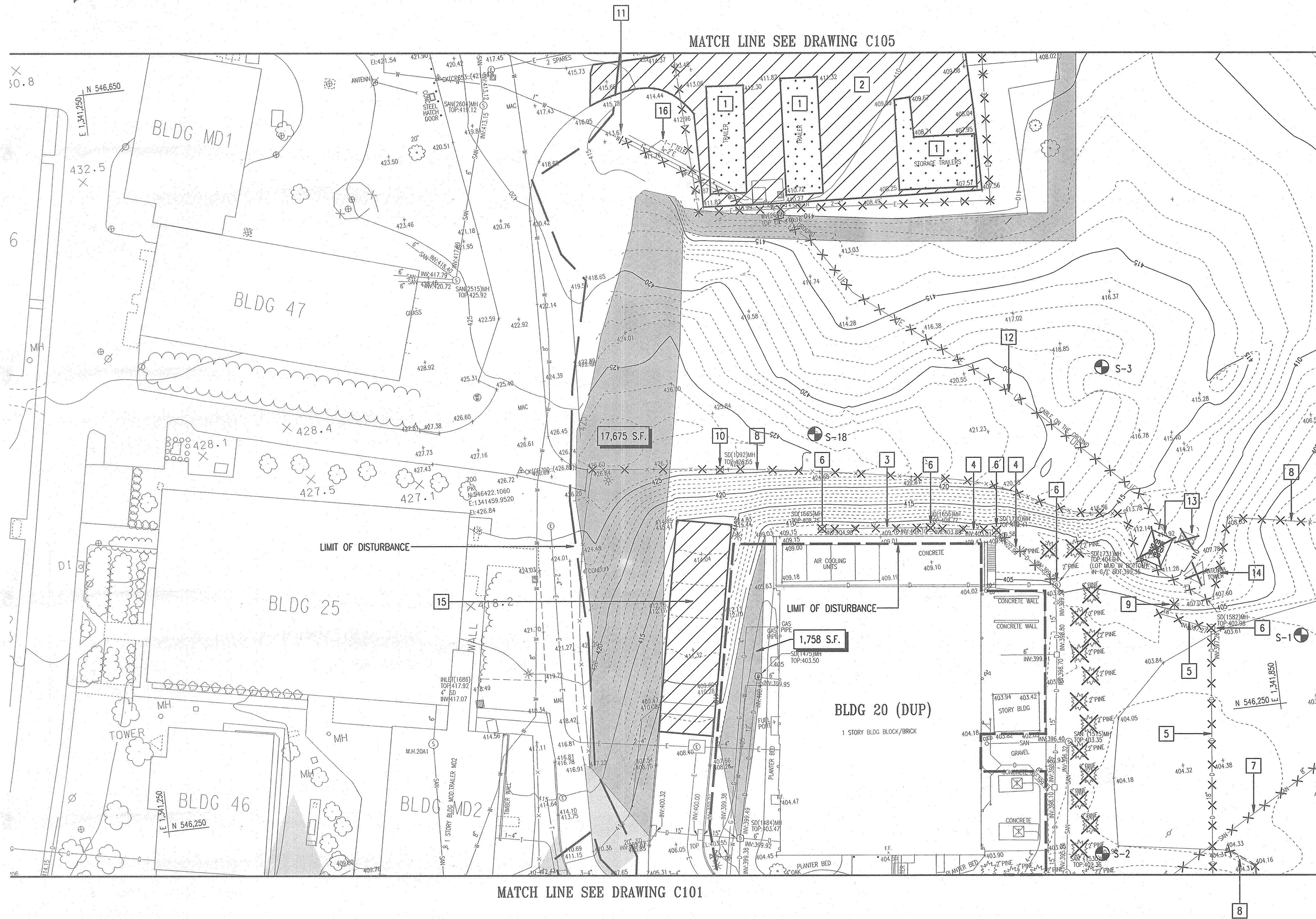
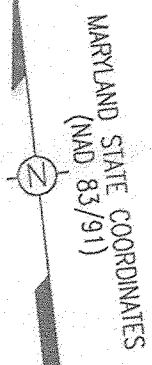
SITE SURVEY AND DEMOLITION PLAN 'B'

DRAWING NO. **C102**
Sheet 4 of 77
Scale: 1"=30'
Designed By: R.B.C. Drawn By: C.J.K.
Checked By: A.U.O. Date: 03/25/05



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
[Signature] 4/20/05
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK
[Signature] 4/24/05
CHIEF, DIVISION OF LAND DEVELOPMENT
[Signature] 4/24/05
DIRECTOR DATE

SDP-05-50



DEMOLITION NOTES:

- 1 EXISTING TRAILERS AND BUILDINGS TO BE REMOVED AND RELOCATED BY THE OWNER.
- 2 REMOVE EXISTING MACADAM/GRAVEL PAVING.
- 3 REMOVE EXISTING 12" STORM DRAIN (SD).
- 4 REMOVE EXISTING 15" STORM DRAIN (SD).
- 5 REMOVE EXISTING 18" STORM DRAIN (SD).
- 6 REMOVE EXISTING STORM DRAIN MANHOLE.
- 7 REMOVE EXISTING 8" SANITARY SEWER (SAN).
- 8 REMOVE EXISTING FENCE.
- 9 REMOVE EXISTING UTILITY POLE.
- 10 REMOVE EXISTING STORM DRAIN MANHOLE.
- 11 CAP EXISTING 1" WATER.
- 12 REMOVE ELECTRICAL CABLE BEFORE ROUGH GRADING.
- 13 REMOVE VINYL SHED AND CONCRETE PAD BEFORE ROUGH GRADING.
- 14 REMOVE ANTENNA TOWER.
- 15 REMOVE EXISTING ASPHALT PAVING, CURB AND GUTTER.
- 16 MAINTAIN POWER AND TELECOM TO VAN PAD UNIT. TRAILERS HAVE BEEN RELOCATED.

ADD RETAINING WALL SHEETS		10/25/05
G	BID SET	3/24/05

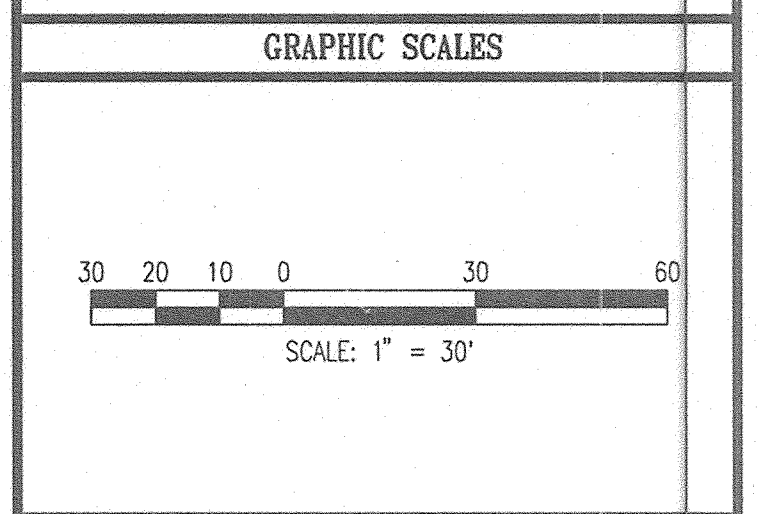
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 LAUREL MARYLAND 20723-6099



SYSTEMS INTEGRATION BUILDINGS AND VAN PAD

SDP SET

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SITE SURVEY AND DEMOLITION PLAN 'C'

DRAWING NO. **C103**

Sheet 5 of 77

Scale: 1"=30'

Designed By: R.B.C. Drawn By: C.J.K.

Checked By: A.U.O. Date: 03/25/05

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Howard County 4/20/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE

Andy Kramer 4/23/05
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

David W. Taylor 4/22/05
 DIRECTOR DATE

MARYLAND STATE COORDINATES
(NAD 83) (91)

DEMOLITION NOTES:

- 1 REMOVE EXISTING 8" SANITARY SEWER (SAN).
- 2 REMOVE EXISTING SANITARY SEWER MANHOLE.
- 3 REMOVE EXISTING UTILITY POLE.
- 4 REMOVE EXISTING FENCE.
- 5 REMOVE EXISTING MACADAM/GRAVEL PAVING
- 6 ABANDON EXISTING SANITARY SEWER (SAN).
- 7 CUT AND CAP EXISTING SANITARY SEWER.
- 8 ABANDON EXISTING SANITARY SEWER MANHOLE.

ADD RETAINING WALL SHEETS	10/25/05
G BID SET	3/24/05

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APPLIED PHYSICS LABORATORY
 JOHNS HOPKINS ROAD
 LAUREL MARYLAND 20723-6099



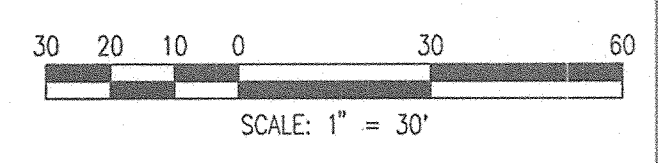
SYSTEMS INTEGRATION BUILDINGS AND VAN PAD

SDP SET

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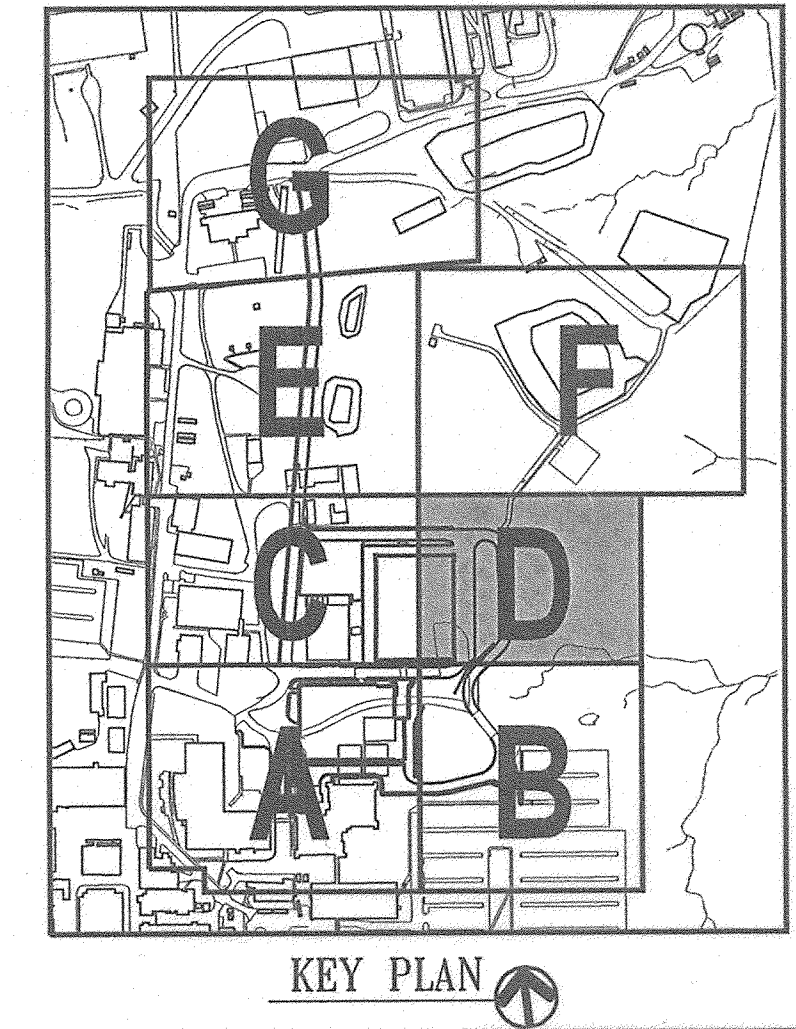
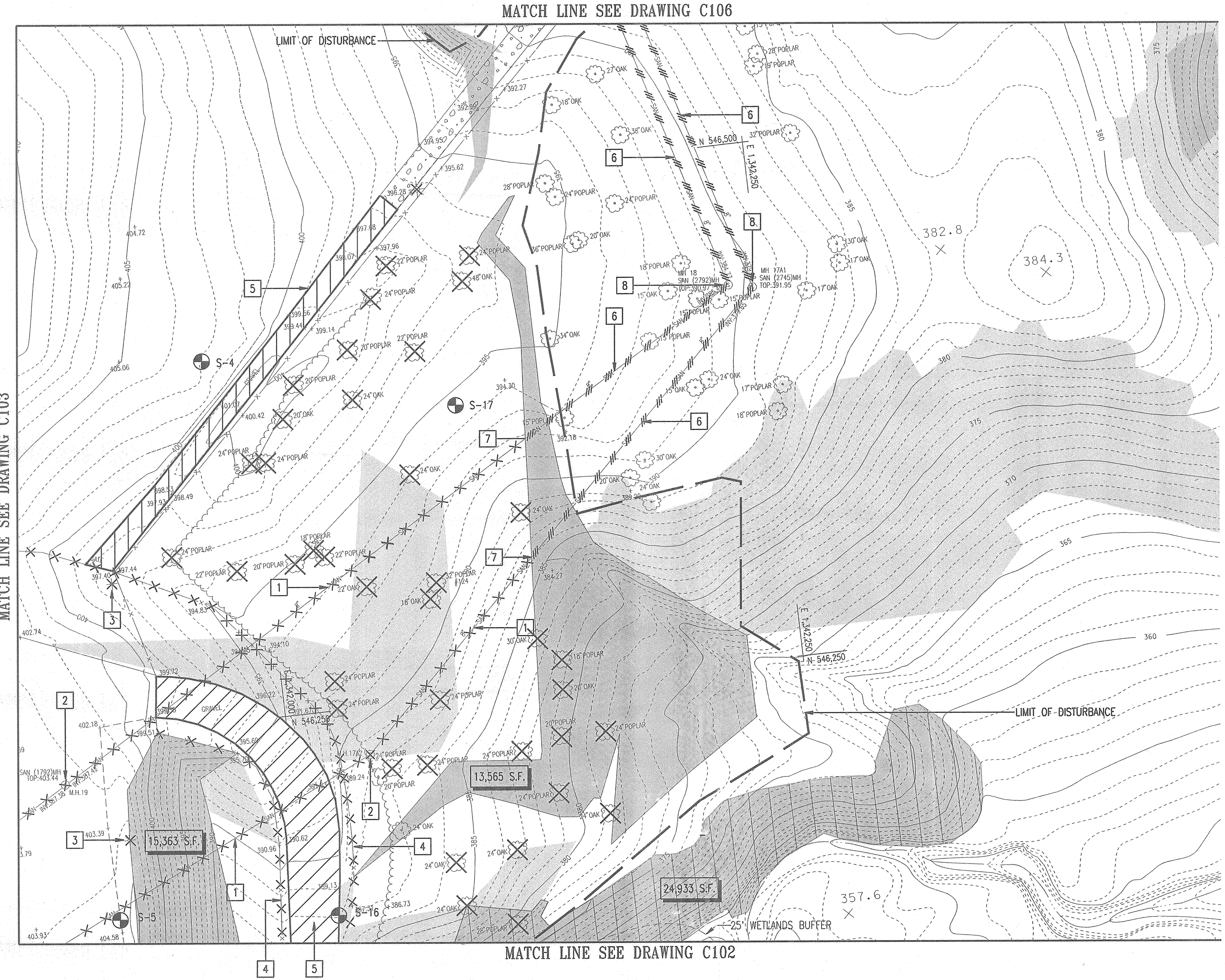
GRAPHIC SCALES



WHITMAN, REQUARDT AND ASSOCIATES, LLP
 801 S. CAROLINE STREET
 BALTIMORE, MARYLAND 21231
 410 - 235 - 3450

SITE SURVEY AND DEMOLITION PLAN 'D'

	DRAWING NO.	C104
	Sheet 6 of 77	
Scale:	1"=30'	
Designed By:	R.B.C.	Drawn By: C.J.K.
Checked By:	A.U.O.	Date: 03/25/05



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

<i>[Signature]</i>	4/20/05
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE
<i>[Signature]</i>	4/22/05
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
<i>[Signature]</i>	4/24/05
DIRECTOR	DATE

SDP-05-50



MARKING SINE COORDINATES
(1676) AND 83/16)

MATCH LINE SEE DRAWING C105

MATCH LINE SEE DRAWING C104

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

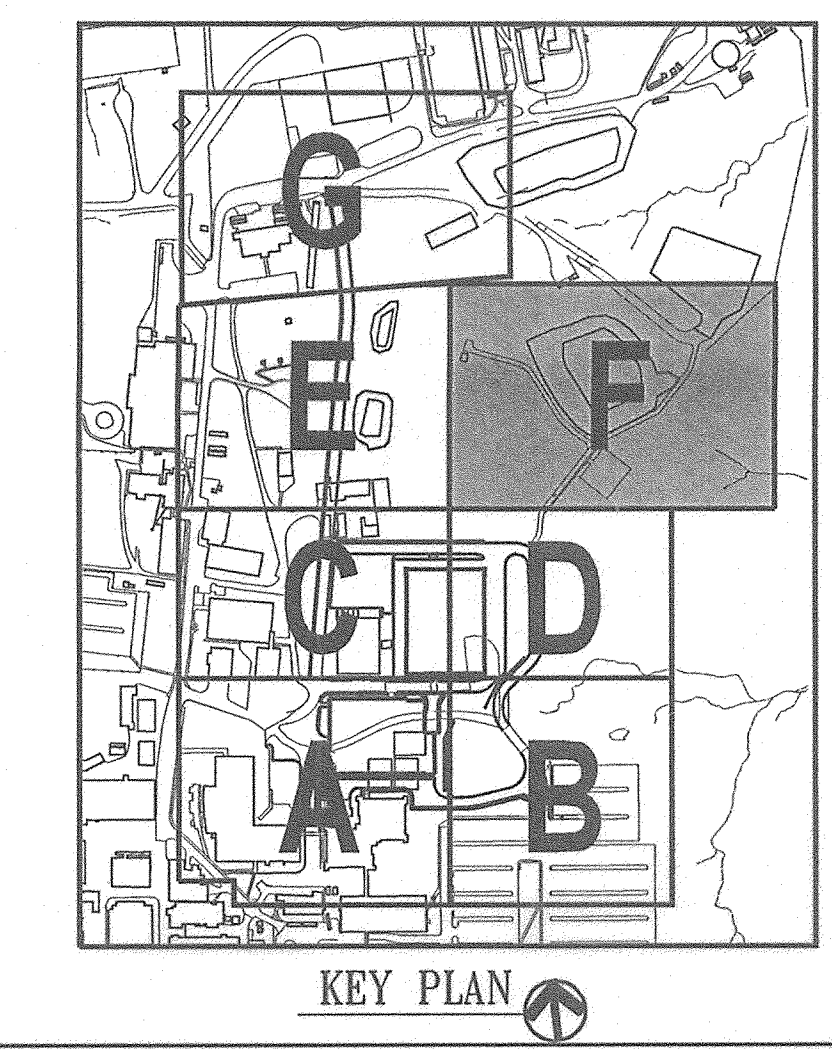
Howard County
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE 4/20/05

Candy Alexander
CHIEF, DIVISION OF LAND DEVELOPMENT WP DATE 4/22/05

M.C. D'Amico
DIRECTOR DATE 4/22/05

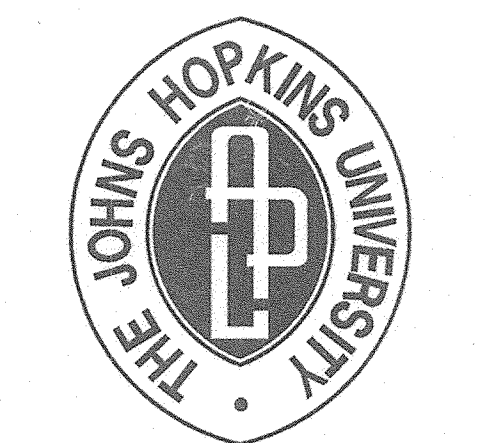
DEMOLITION NOTES:

1 ABANDON EXISTING 8" SANITARY SEWER (SAN) UPON COMPLETION OF NEW SANITARY. PLUG OPENING IN MANHOLE WITH BRICK AND MORTAR.



ADD RETAINING WALL SHEETS	10/25/05
G BID SET	3/24/05

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JOHNS HOPKINS ROAD
LAUREL MARYLAND 20723-6099

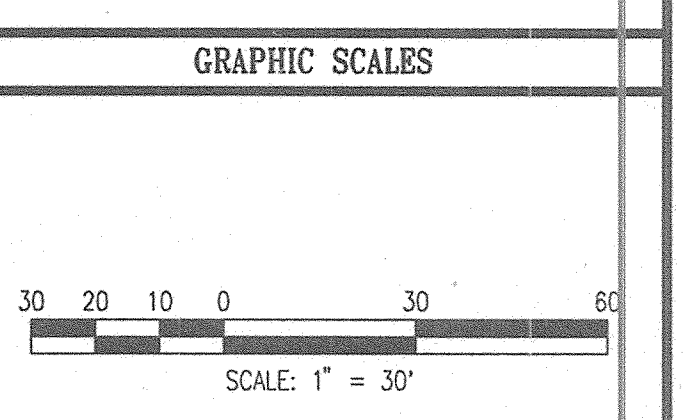


SYSTEMS INTEGRATION BUILDINGS AND VAN PAD

SDP SET

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801 S. CAROLINE STREET
BALTIMORE, MARYLAND 21231
410 - 235 - 3450

SITE SURVEY AND DEMOLITION PLAN 'F'

DRAWING NO. **C106**

Sheet 8 of 77

Scale: 1" = 30'

Designed By: R.B.C. Drawn By: C.J.K.

Checked By: A.U.O. Date: 03/25/05

SDP-05-56



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

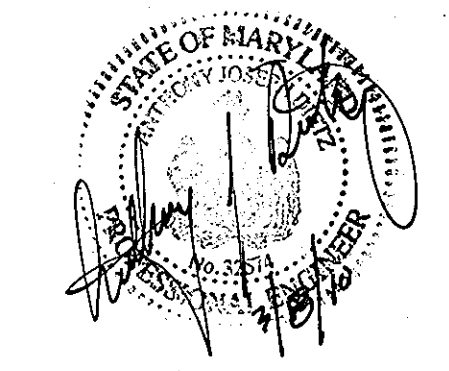
Howard County 4/20/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE

Charles Klumpp 4/20/05
 CHIEF, DIVISION OF LAND DEVELOPMENT DME DATE

John J. ... 4/22/05
 DIRECTOR DATE

DEMOLITION NOTES:

- 1 REMOVE EXISTING 4" ABANDONED WATER LINE.
- △ EX. UTILITY TO BE REMOVED -x-x-SD-x-x-
- EX. UTILITY TO BE ABANDONED IN PLACE -o-o-SD-o-o-
- EX. BUILDING TO BE RAZED/ EX. PAVING & SIDEWALKS TO BE REMOVED [Hatched Box]



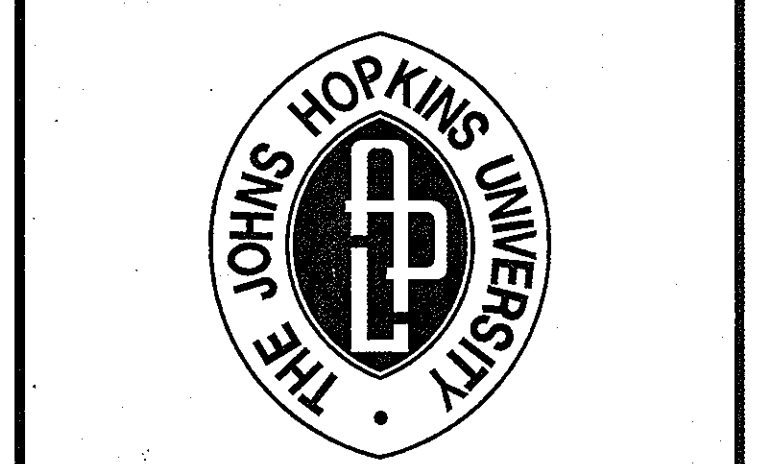
FOR △ REVISION ONLY



KEY PLAN

△ BUILDING #30	12/14/09	
△ ADD RETAINING WALL SHEETS	10/25/05	
G BID SET	3/24/05	

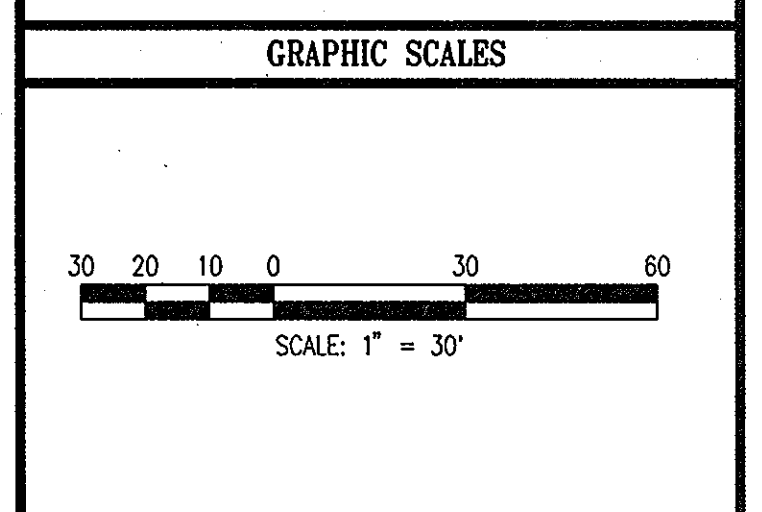
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 JOHNS HOPKINS ROAD
 LAUREL MARYLAND 20723-6099



SYSTEMS INTEGRATION BUILDINGS AND VAN PAD

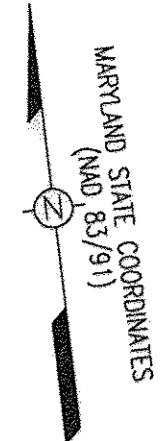
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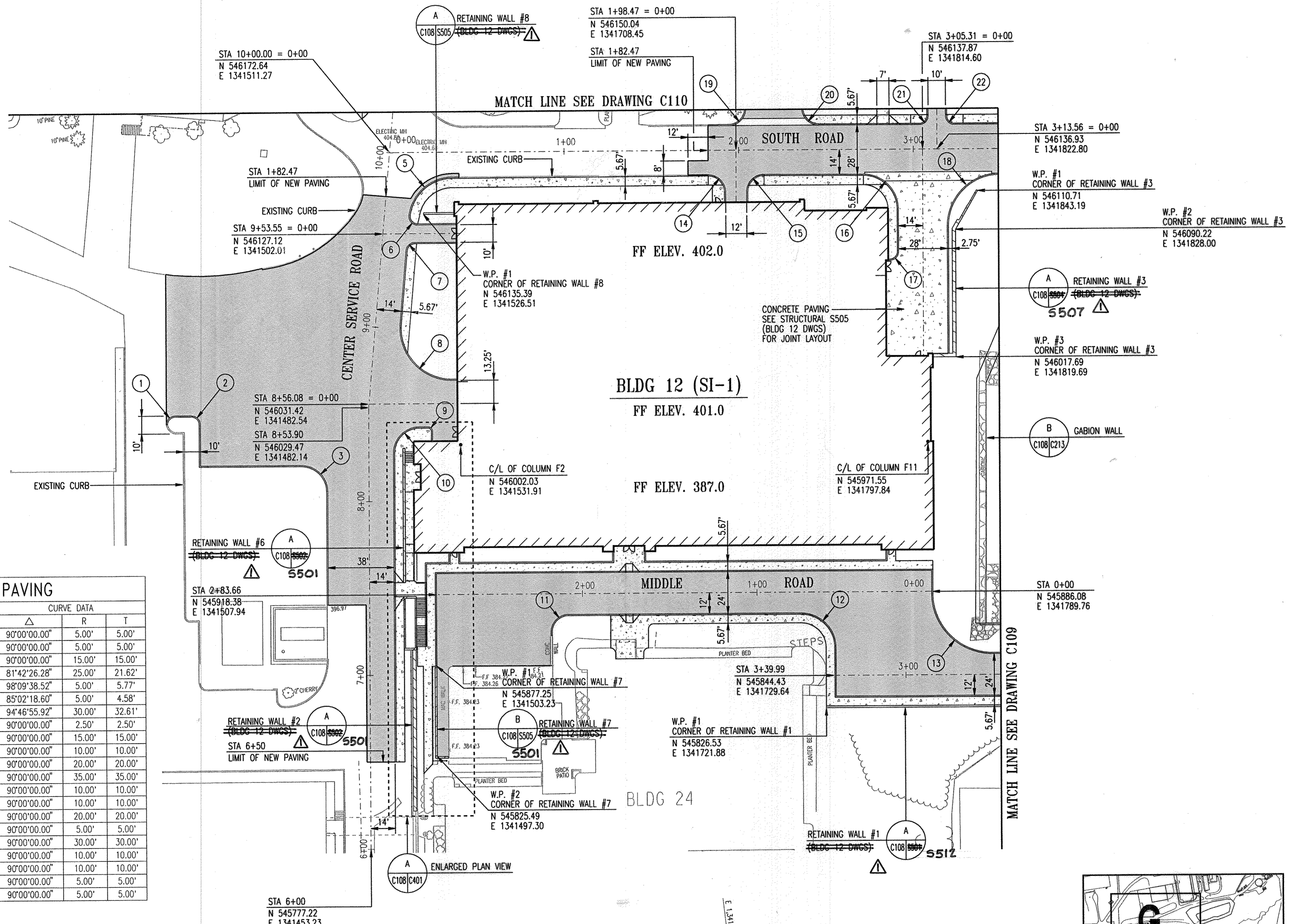


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 410 - 235 - 3450

SITE SURVEY AND DEMOLITION PLAN 'G'	
DRAWING NO.	C107
Sheet 9 of 17	77
Scale: 1"=30'	
Designed By: R.B.C.	Drawn By: C.J.K.
Checked By: A.U.O.	Date: 03/25/05



N 546,200
E 1,341,200



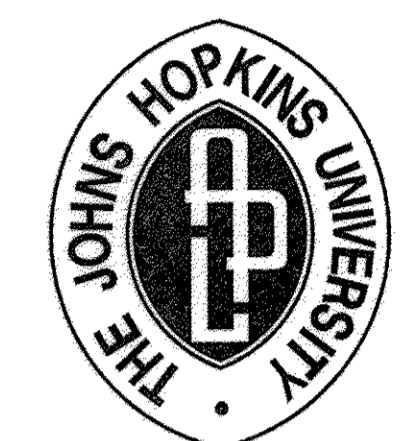
STAKEOUT DATA - PAVING

No.	DESCRIPTION	NORTH	EAST	CURVE DATA		
				Δ	R	T
1	P.I. CURB AND GUTTER	546038.63	1341366.47	90°00'00.00"	5.00'	5.00'
2	P.I. CURB AND GUTTER	546036.42	1341385.74	90°00'00.00"	5.00'	5.00'
3	P.I. CURB AND GUTTER	545999.49	1341454.82	90°00'00.00"	15.00'	15.00'
5	P.I. CURB AND GUTTER	546156.96	1341523.64	81°42'26.28"	25.00'	21.62'
6	P.I. CURB AND GUTTER	546130.47	1341516.69	98°09'38.52"	5.00'	5.77'
7	P.I. CURB AND GUTTER	546120.60	1341514.97	85°02'18.60"	5.00'	4.58'
8	P.I. CURB AND GUTTER	546043.00	1341499.18	94°46'55.92"	30.00'	32.61'
9	P.I. CURB AND GUTTER	546014.21	1341517.13	90°00'00.00"	2.50'	2.50'
10	P.I. CURB AND GUTTER	546016.77	1341494.78	90°00'00.00"	15.00'	15.00'
11	P.I. CURB AND GUTTER	545898.99	1341571.71	90°00'00.00"	10.00'	10.00'
12	P.I. CURB AND GUTTER	545880.42	1341733.76	90°00'00.00"	20.00'	20.00'
13	P.I. CURB AND GUTTER	545850.09	1341785.63	90°00'00.00"	35.00'	35.00'
14	P.I. CURB AND GUTTER	546136.96	1341700.92	90°00'00.00"	10.00'	10.00'
15	P.I. CURB AND GUTTER	546135.65	1341712.84	90°00'00.00"	10.00'	10.00'
16	P.I. CURB AND GUTTER	546125.54	1341799.09	90°00'00.00"	20.00'	20.00'
17	P.I. CURB AND GUTTER	546076.56	1341793.48	90°00'00.00"	5.00'	5.00'
18	P.I. CURB AND GUTTER	546122.37	1341826.91	90°00'00.00"	30.00'	30.00'
19	P.I. CURB AND GUTTER	546163.30	1341715.77	90°00'00.00"	10.00'	10.00'
20	P.I. CURB AND GUTTER	546159.65	1341747.56	90°00'00.00"	10.00'	10.00'
21	P.I. CURB AND GUTTER	546151.41	1341819.42	90°00'00.00"	5.00'	5.00'
22	P.I. CURB AND GUTTER	546150.27	1341829.36	90°00'00.00"	5.00'	5.00'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DEVELOPMENT ENGINEERING DIVISION: *[Signature]* MK DATE: 4/22/05
 CHIEF, DIVISION OF LAND DEVELOPMENT: *[Signature]* DATE: 4/22/05
 DIRECTOR: *[Signature]* DATE: 4/22/05

RETAINING WALL DETAILS 10/25/05	
C BID SET	3/24/05

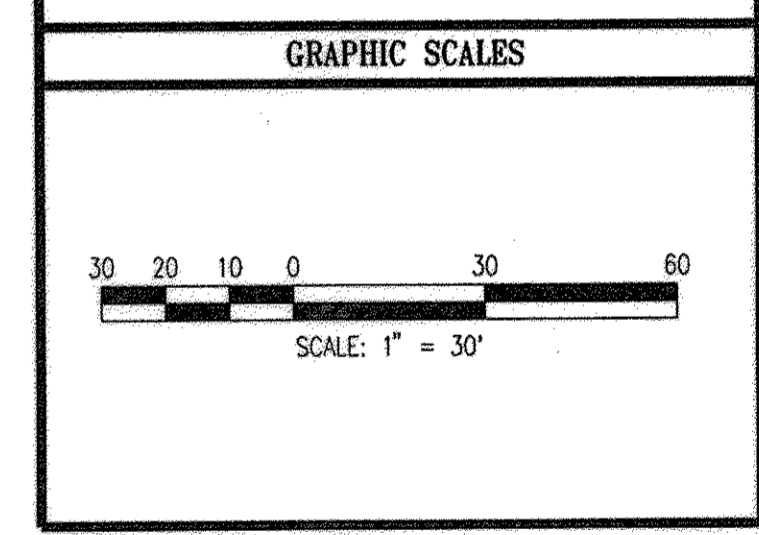
THE JOHNS HOPKINS UNIVERSITY
 APPLIED PHYSICS LABORATORY
 JOHNS HOPKINS ROAD
 LAUREL MARYLAND 20723-6099



SYSTEMS INTEGRATION BUILDINGS AND VAN PAD

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 BALTIMORE, MARYLAND 21231
 410 - 235 - 3450

STAKEOUT PLAN 'A'

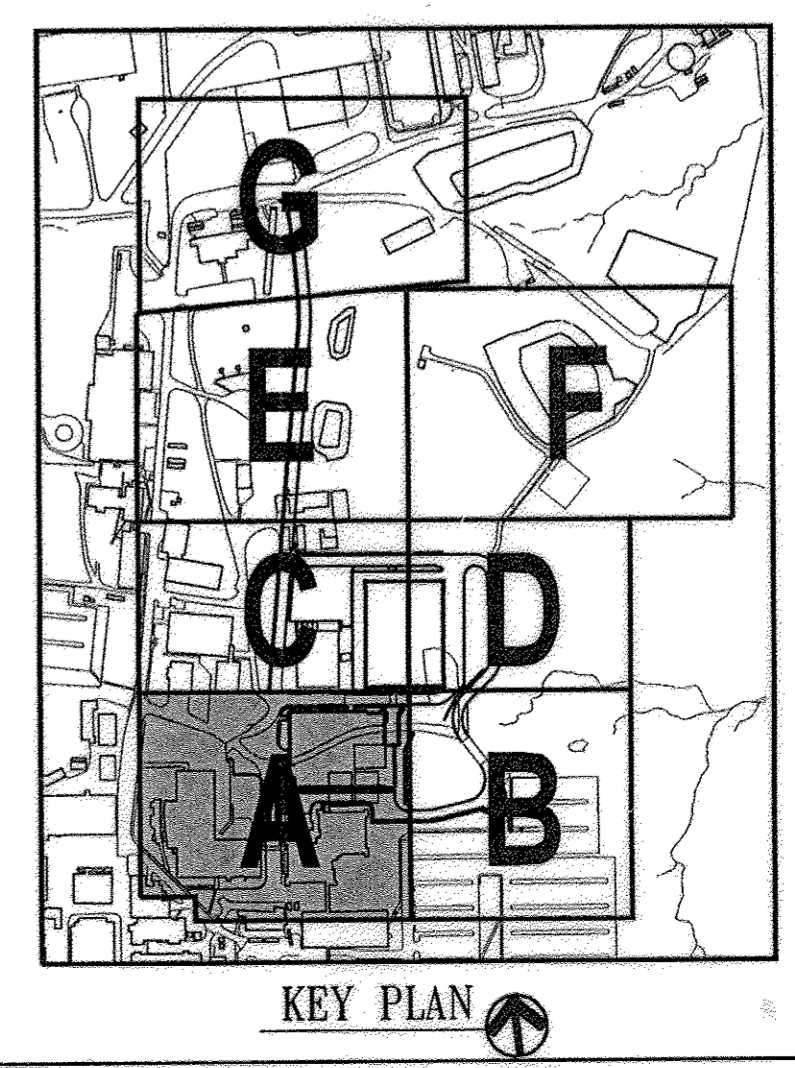
DRAWING NO. C108

Sheet 10 of 17

Scale: 1"=30'

Designed By: R.B.C. Drawn By: C.J.K.

Checked By: A.U.O. Date: 03/25/05



SDP-05-50

m:\BIO26\BIO26-C108.dgn
 Thu Mar 31 08:05:45 2005

MARYLAND STATE COORDINATES
(NAD 83) (11)

△	ADDED WALKWAY & STAIRS	9/27/19
△	RETAINING WALL DETAIL	10/25/05
G	BID SET	3/24/05

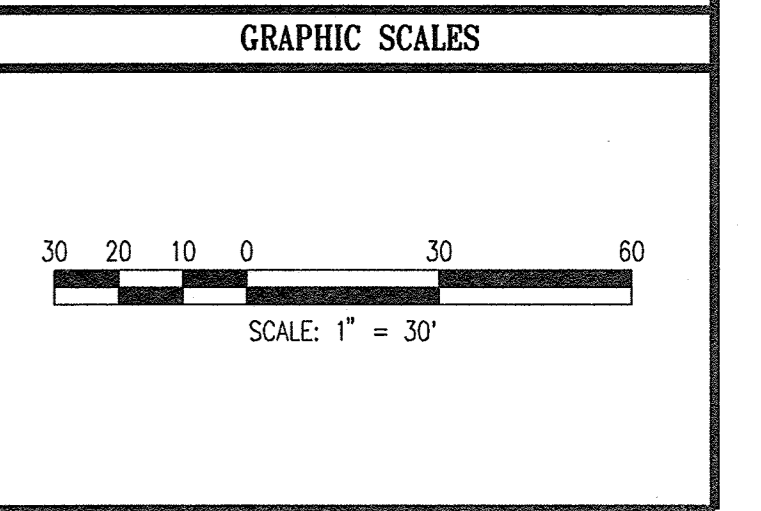
THE JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
JOHNS HOPKINS ROAD
LAUREL MARYLAND 20723-6099



SYSTEMS INTEGRATION BUILDINGS AND VAN PAD

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WHITMAN, REQUARD AND ASSOCIATES, LLP
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BALTIMORE, MARYLAND 21231
410 - 235 - 3450

STAKEOUT PLAN 'C'

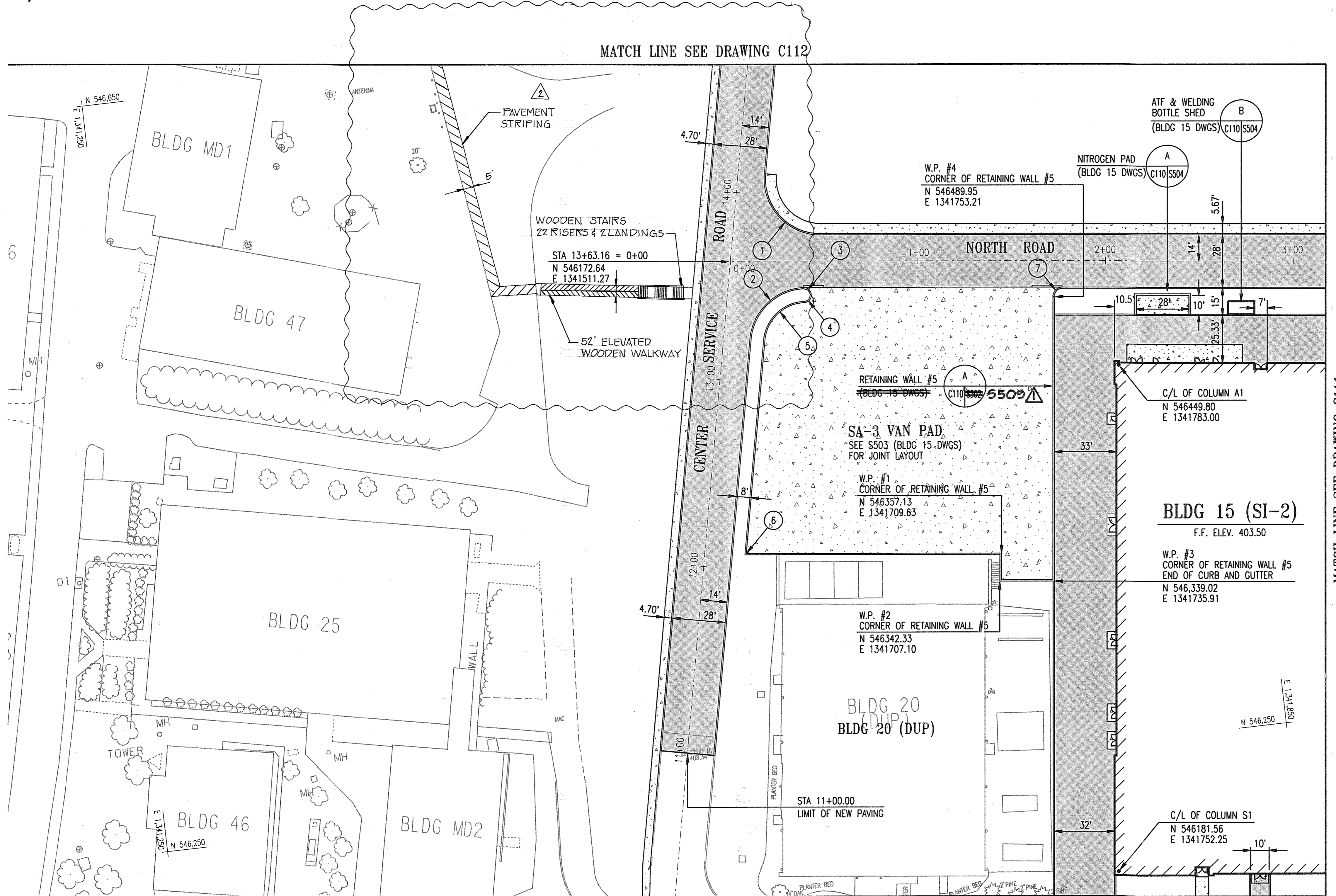
DRAWING NO. **C110**

Sheet 12 of 77

Scale: 1"=30'

Designed By: R.B.C. Drawn By: C.J.K.

Checked By: A.U.O. Date: 03/25/05



MATCH LINE SEE DRAWING C112

MATCH LINE SEE DRAWING C111

MATCH LINE SEE DRAWING C108

STAKEOUT DATA - PAVING

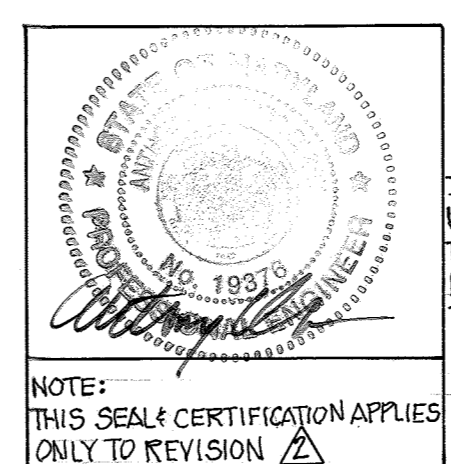
No.	DESCRIPTION	NORTH	EAST	CURVE DATA		
				Δ	R	T
1	P.I. CURB AND GUTTER	546540.68	1341600.43	94°57'41.40"	30.00'	32.72'
2	P.I. CURB AND GUTTER	546511.99	1341594.60	82°33'42.84"	30.00'	26.34'
3	P.I. CURB AND GUTTER	546509.77	1341624.97	91°38'06.72"	4.00'	4.12"
4	P.I. CURB AND GUTTER	546501.89	1341624.07	87°24'45.00"	4.00'	3.82"
5	P.I. CURB AND GUTTER	546503.44	1341601.55	80°51'55.44"	22.00'	18.75'
6	P.I. CURB AND GUTTER	546372.63	1341574.41	-	-	-
7	P.I. CURB AND GUTTER	546495.04	1341752.78	90°00'00.00"	5.00'	5.00'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

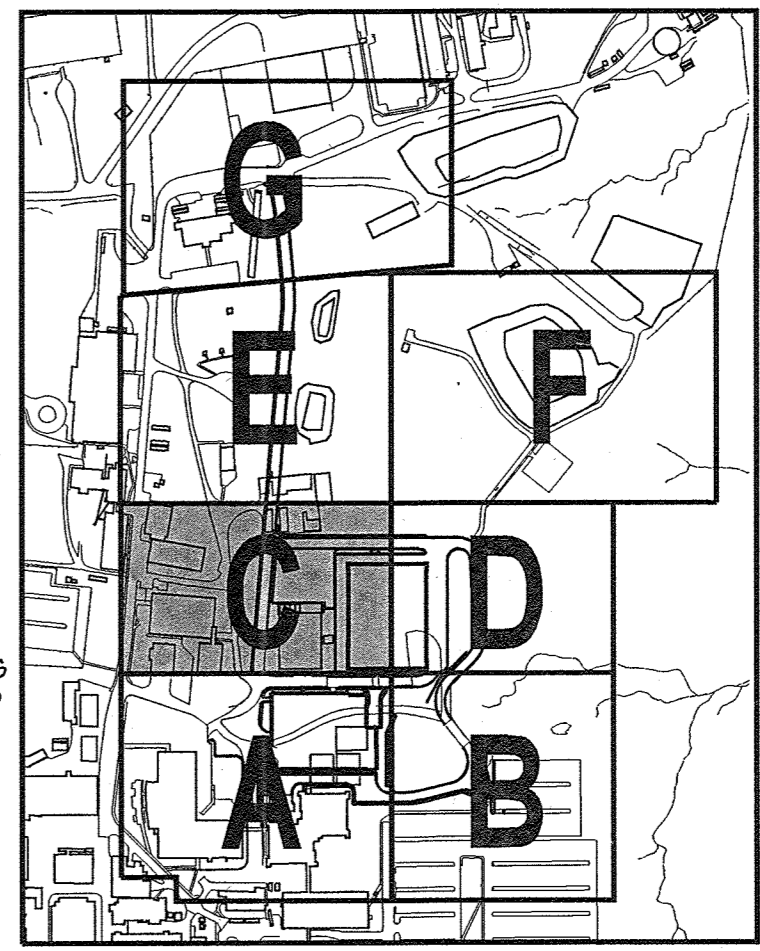
[Signature] 4/20/05
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE

[Signature] 4/20/05
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

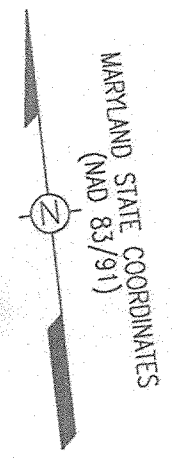
[Signature] 4/22/05
DIRECTOR DATE



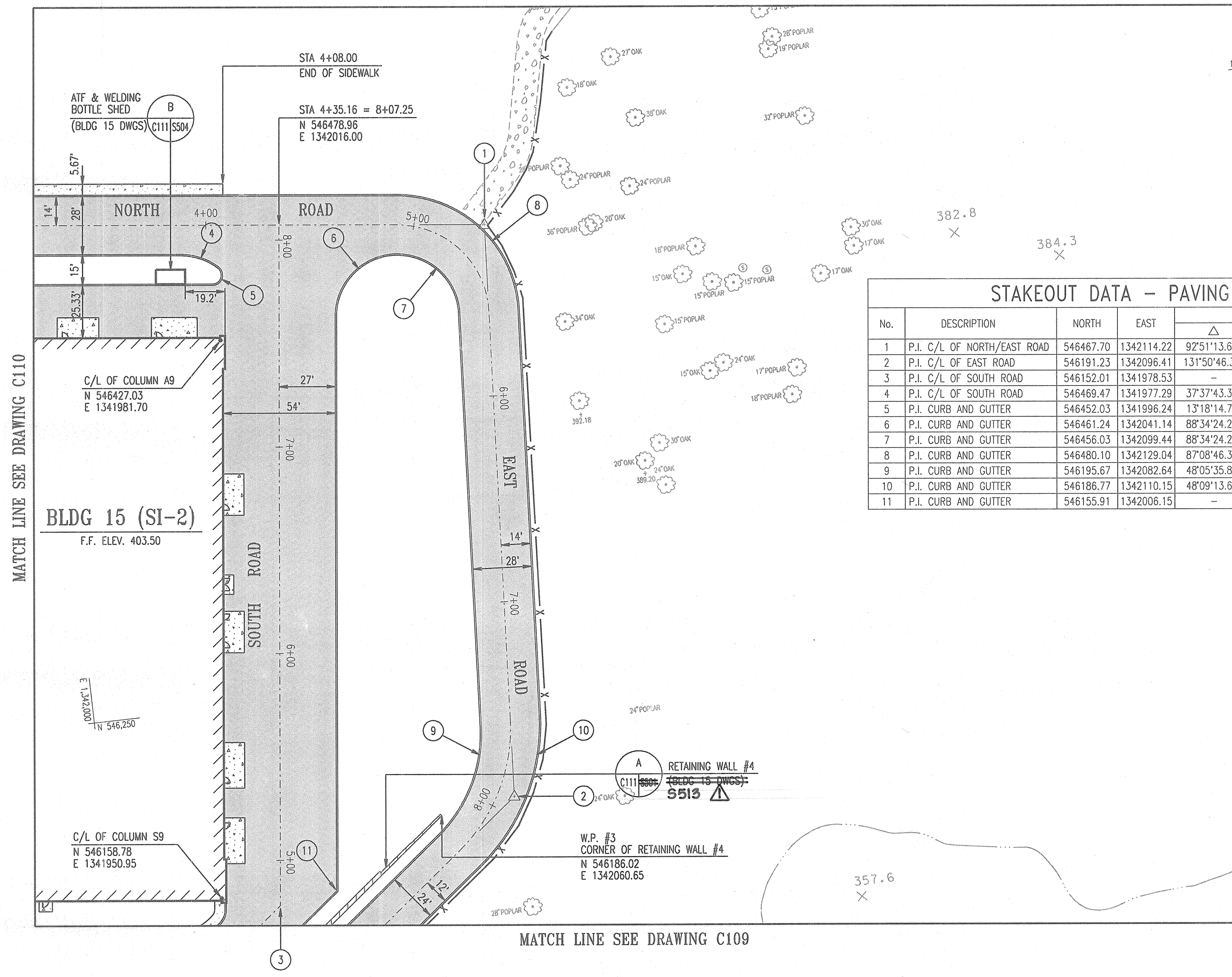
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSED NUMBER 19376
EXPIRATION DATE SEPTEMBER 22, 2021



KEY PLAN



MATCH LINE SEE DRAWING C113

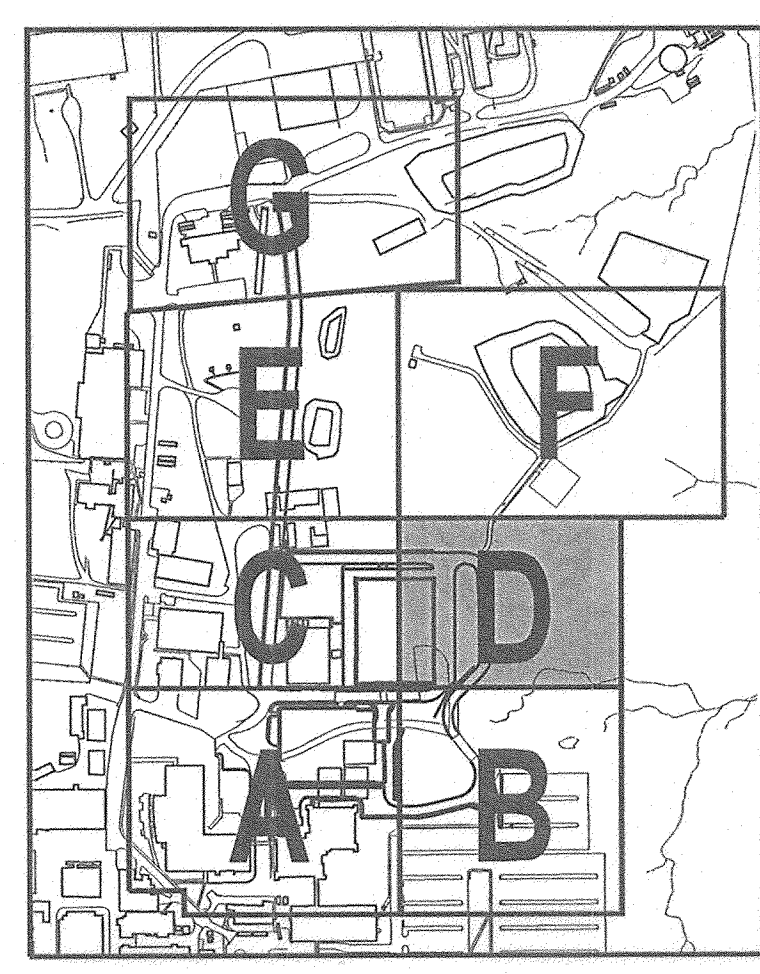


STAKEOUT DATA - PAVING

No.	DESCRIPTION	NORTH	EAST	CURVE DATA		
				Δ	R	T
1	P.I. C/L OF NORTH/EAST ROAD	546467.70	1342114.22	92°51'13.68"	44.00'	41.86'
2	P.I. C/L OF EAST ROAD	546191.23	1342096.41	131°50'46.30"	83.00'	37.09'
3	P.I. C/L OF SOUTH ROAD	546152.01	1341978.53	-	-	-
4	P.I. C/L OF SOUTH ROAD	546469.47	1341977.29	37°37'43.32"	30.00'	10.22'
5	P.I. CURB AND GUTTER	546452.03	1341996.24	13°18'14.76"	5.00'	15.53'
6	P.I. CURB AND GUTTER	546461.24	1342041.14	88°34'24.24"	30.00'	29.26'
7	P.I. CURB AND GUTTER	546456.03	1342099.44	88°34'24.24"	30.00'	29.26'
8	P.I. CURB AND GUTTER	546480.10	1342129.04	87°08'46.32"	58.00'	55.18'
9	P.I. CURB AND GUTTER	546195.67	1342082.64	48°05'35.88"	70.00'	31.23'
10	P.I. CURB AND GUTTER	546186.77	1342110.15	48°09'13.68"	96.00'	42.90'
11	P.I. CURB AND GUTTER	546155.91	1342006.15	-	-	-

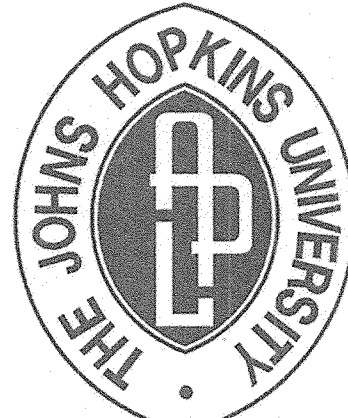
MATCH LINE SEE DRAWING C110

MATCH LINE SEE DRAWING C109



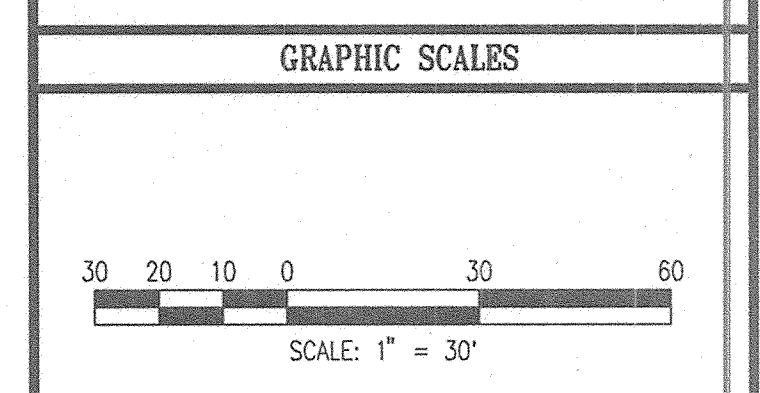
RETAINING WALL DETAIL		10/25/05
G	BID SET	3/24/05


THE JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
 JOHNS HOPKINS ROAD
 LAUREL MARYLAND 20723-6099


SYSTEMS INTEGRATION BUILDINGS AND VAN PAD

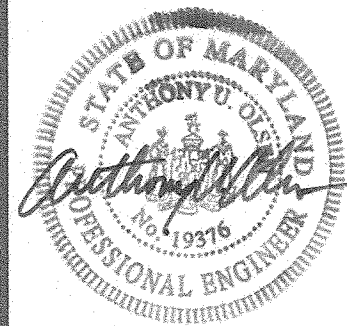
SDP SET

JHU/APL INTERNAL USE
THIS DATA SHALL NOT BE DISCLOSED TO A THIRD PARTY AND SHALL NOT BE DUPLICATED, USED, OR DISCLOSED IN WHOLE OR IN PART FOR ANY PURPOSE OTHER THAN TO EVALUATE THIS RFP OR, IN THE CASE OF A CONTRACT AWARD, TO PERFORM THE WORK REQUIRED HEREUNDER, WITHOUT THE EXPRESS WRITTEN CONSENT OF JHU/APL.




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 BALTIMORE, MARYLAND 21231
 410 - 235 - 3450

STAKEOUT PLAN 'D'

	DRAWING NO.
	C111
Sheet 13 of 17	
Scale: 1"=30'	Designed By: R.B.C. Drawn By: C.J.K.
Checked By: A.U.O.	Date: 03/25/05

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

<i>[Signature]</i>	4/26/05
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
<i>[Signature]</i>	4/26/05
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
<i>[Signature]</i>	4/26/05
DIRECTOR	DATE

SDP-05-50

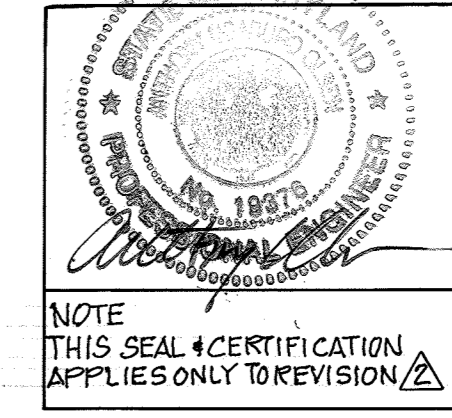
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Thu Mar 31 08:05:58 2005



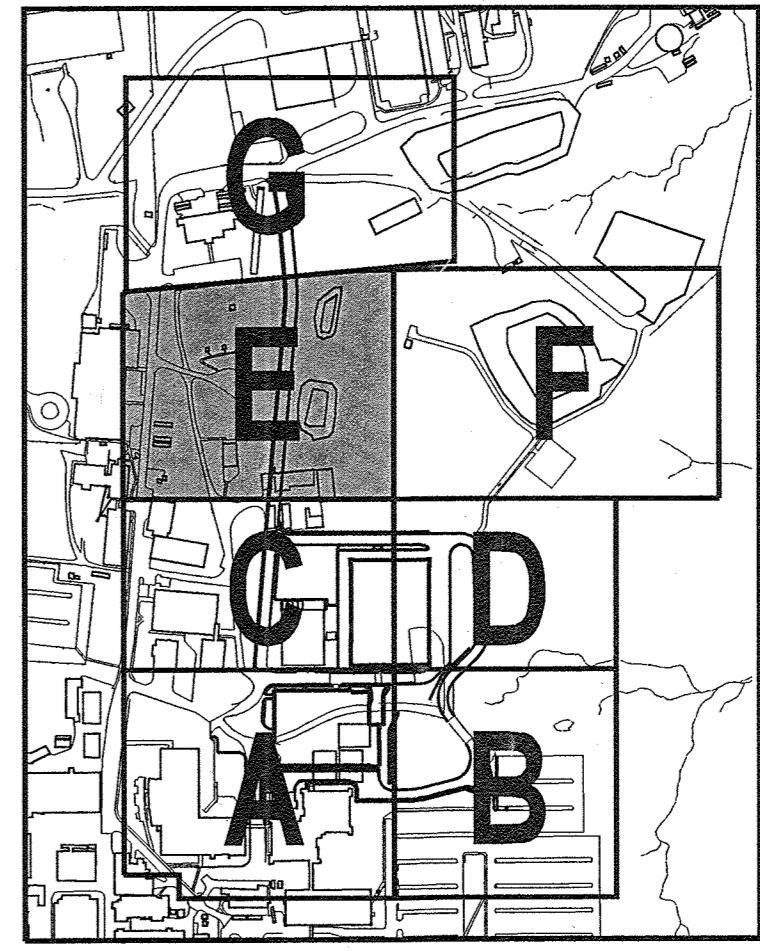
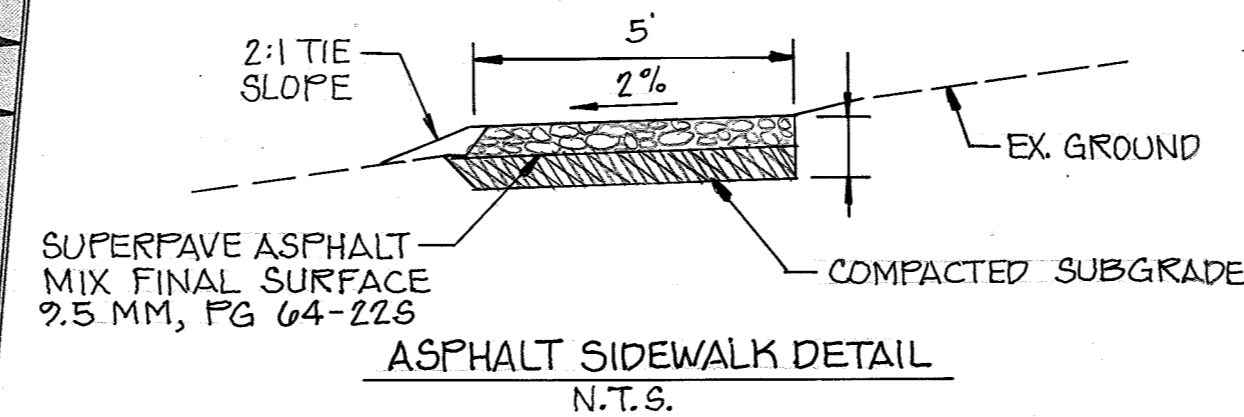
STAKEOUT DATA - PAVING

No.	DESCRIPTION	NORTH	EAST	CURVE DATA		
				Δ	R	T
1	P.I. C/L OF CENTER SERVICE ROAD	547155.86	1341711.31	10°05'37.32"	500.00'	44.16'
2	P.I. CURB AND GUTTER	547154.27	1341725.27	10°05'37.32"	514.00'	45.39'
3	P.I. CURB AND GUTTER	547157.43	1341697.34	91°38'06.72"	486.00'	42.92'

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NUMBER 10370 EXPIRATION DATE SEPTEMBER 22, 2021.



NOTE THIS SEAL & CERTIFICATION APPLIES ONLY TO REVISION



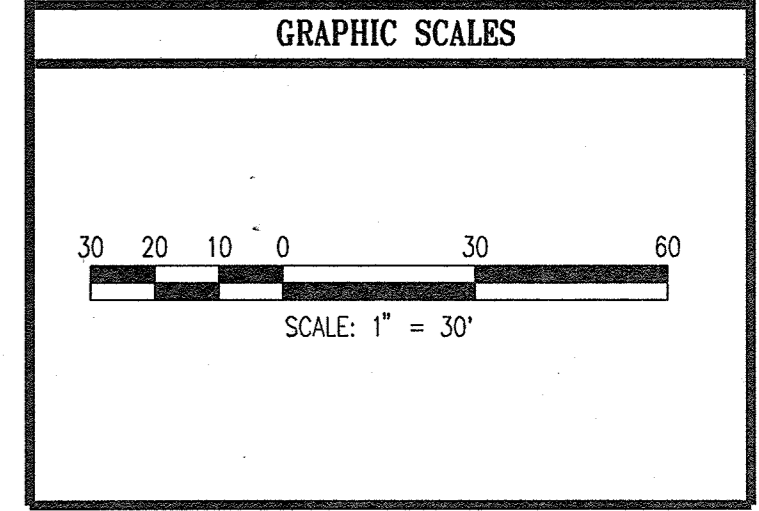
ADDED SIDEWALK	7/27/19
ADD RETAINING WALL SHEETS	10/25/05
G BID SET	3/24/05

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 LAUREL MARYLAND 20723-6099

SYSTEMS INTEGRATION BUILDINGS AND VAN PAD

SDP SET

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STAKEOUT PLAN 'E'

	DRAWING NO.
	C112
Sheet 14 of 77	
Scale: 1"=30'	
Designed By: R.B.C.	Drawn By: C.J.K.
Checked By: A.U.O.	Date: 03/25/05

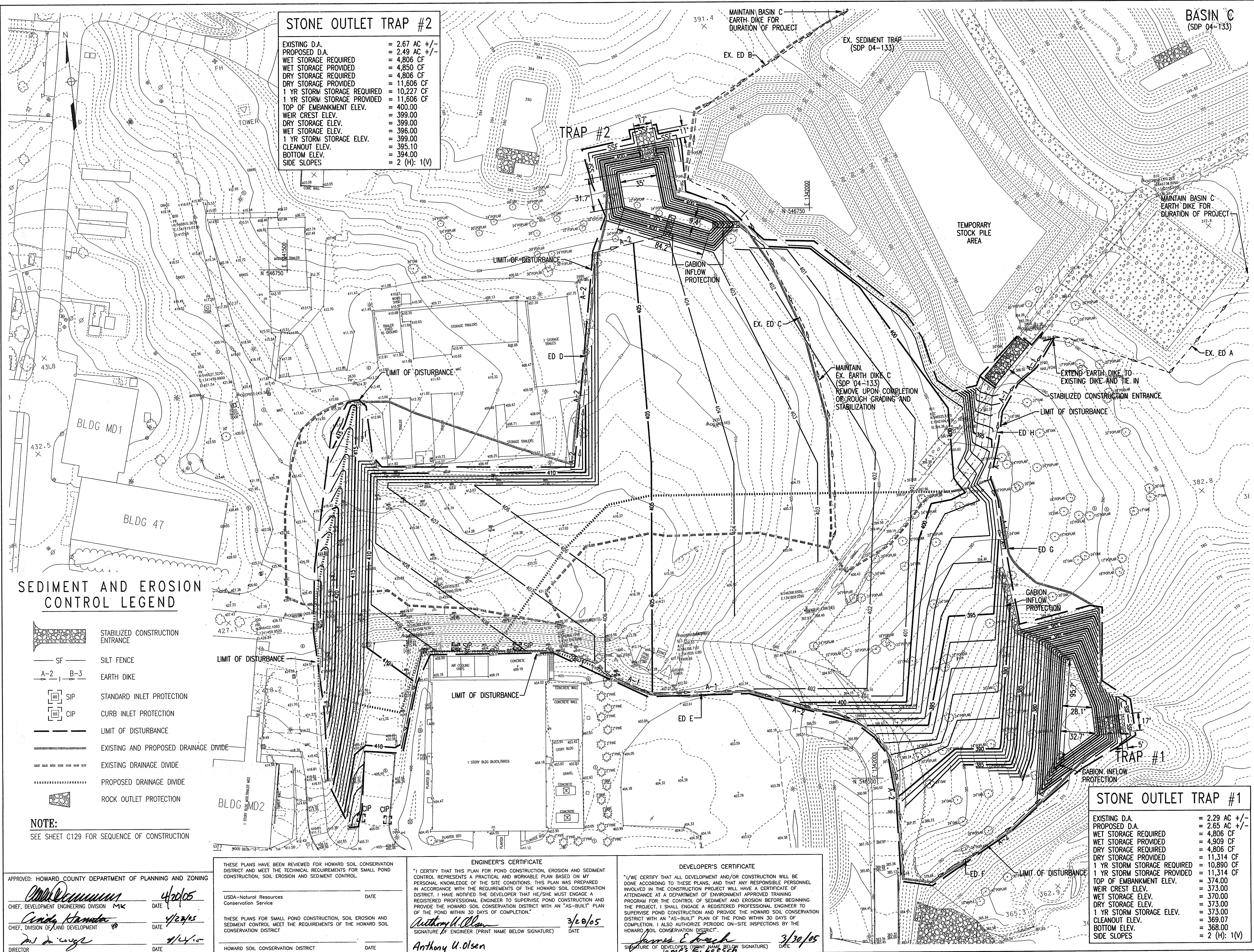
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

	4/20/05
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
	4/20/05
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
	4/20/05
DIRECTOR	DATE

STONE OUTLET TRAP #2

EXISTING D.A.	= 2.67 AC +/-
PROPOSED D.A.	= 2.49 AC +/-
WET STORAGE REQUIRED	= 4,806 CF
WET STORAGE PROVIDED	= 4,806 CF
DRY STORAGE REQUIRED	= 4,806 CF
DRY STORAGE PROVIDED	= 11,606 CF
1 YR STORM STORAGE REQUIRED	= 10,227 CF
1 YR STORM STORAGE PROVIDED	= 11,606 CF
TOP OF EMBANKMENT ELEV.	= 400.00
WEIR CREST ELEV.	= 399.00
DRY STORAGE ELEV.	= 399.00
WET STORAGE ELEV.	= 396.00
1 YR STORM STORAGE ELEV.	= 399.00
CLEANOUT ELEV.	= 395.10
BOTTOM ELEV.	= 394.00
SIDE SLOPES	= 2 (H): 1(V)

BASIN C (SDP 04-133)



SEDIMENT AND EROSION CONTROL LEGEND

- STABILIZED CONSTRUCTION ENTRANCE
- SILT FENCE
- EARTH DIKE
- STANDARD INLET PROTECTION
- CURB INLET PROTECTION
- LIMIT OF DISTURBANCE
- EXISTING AND PROPOSED DRAINAGE DIVIDE
- EXISTING DRAINAGE DIVIDE
- PROPOSED DRAINAGE DIVIDE
- ROCK OUTLET PROTECTION

NOTE:
SEE SHEET C129 FOR SEQUENCE OF CONSTRUCTION

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 4/20/05
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE

[Signature] 4/20/05
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 4/24/05
DIRECTOR DATE

THESE PLANS HAVE BEEN REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

USDA-Natural Resources Conservation Service DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT

HOWARD SOIL CONSERVATION DISTRICT DATE

ENGINEER'S CERTIFICATE

"I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."

[Signature] 3/20/05
ANTHONY U. OLSEN DATE

DEVELOPER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

[Signature] 3/30/05
DATE

STONE OUTLET TRAP #1

EXISTING D.A.	= 2.29 AC +/-
PROPOSED D.A.	= 2.65 AC +/-
WET STORAGE REQUIRED	= 4,806 CF
WET STORAGE PROVIDED	= 4,909 CF
DRY STORAGE REQUIRED	= 4,806 CF
DRY STORAGE PROVIDED	= 11,314 CF
1 YR STORM STORAGE REQUIRED	= 10,890 CF
1 YR STORM STORAGE PROVIDED	= 11,314 CF
TOP OF EMBANKMENT ELEV.	= 374.00
WEIR CREST ELEV.	= 373.00
WET STORAGE ELEV.	= 370.00
DRY STORAGE ELEV.	= 373.00
1 YR STORM STORAGE ELEV.	= 373.00
CLEANOUT ELEV.	= 369.07
BOTTOM ELEV.	= 368.00
SIDE SLOPES	= 2 (H): 1(V)

ADD RETAINING WALL SHEETS 10/25/05
G BID SET 3/24/05

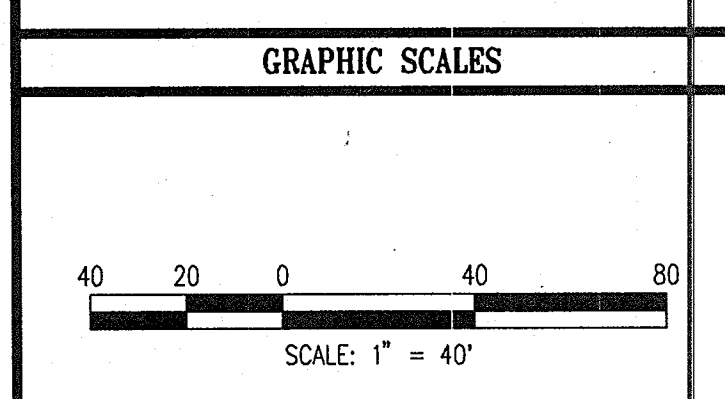
THE JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
JOHNS HOPKINS ROAD
LAUREL MARYLAND 20723-6099



SYSTEMS INTEGRATION BUILDINGS AND VAN PAD

SDP SET

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410 - 235 - 3450

ROUGH GRADING PLAN

DRAWING NO. **C114**

Sheet 16 of 77

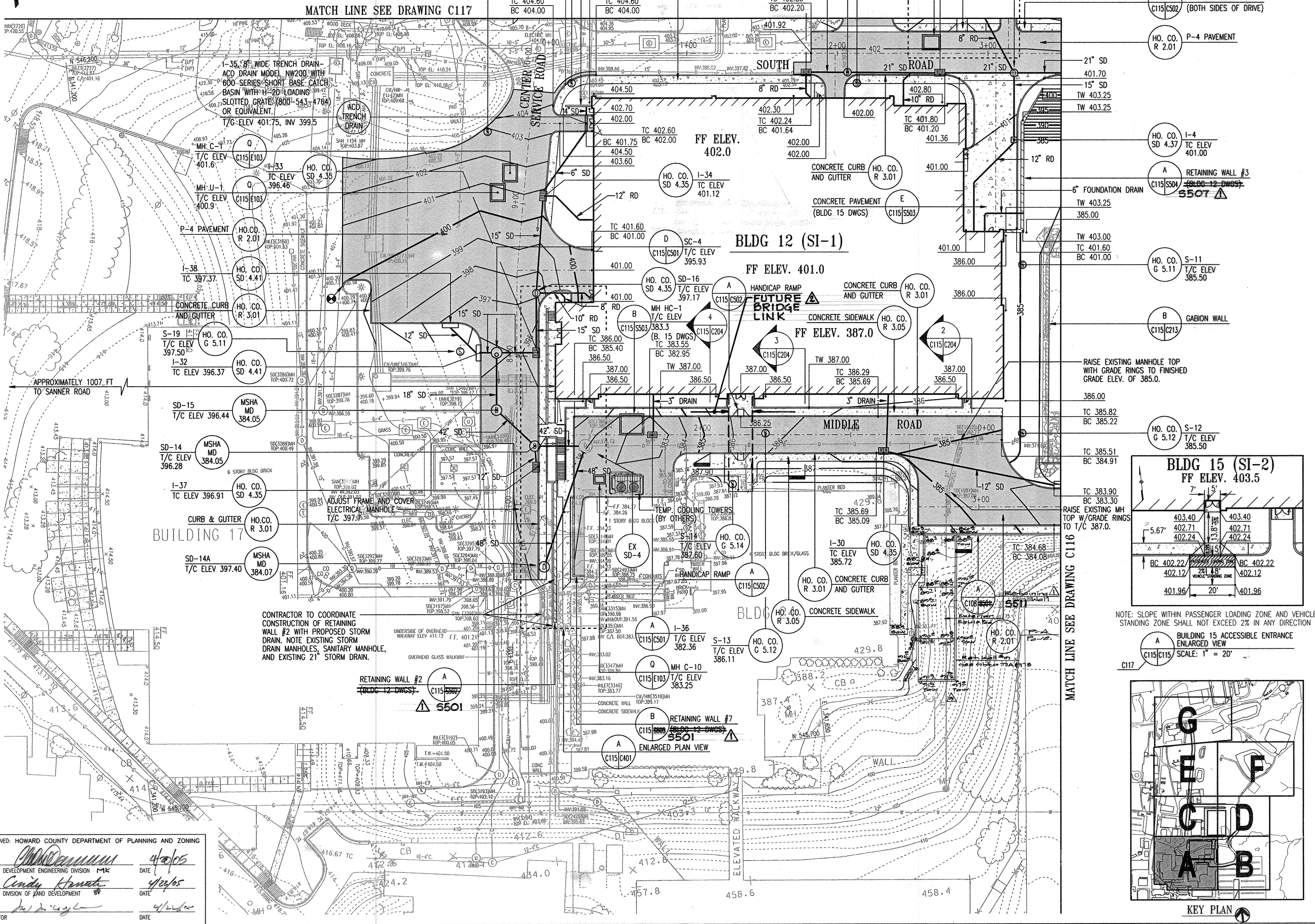
Scale: 1" = 40'

Designed By: R.B.C. Drawn By: C.J.K.
Checked By: A.U.O. Date: 03/25/05

NOTE: TRASH AND WASTE FROM BUILDING 12 OPERATIONS WILL BE REMOVED DAILY BY APL. Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, license No. 12975, expiration date May 20, 2010.

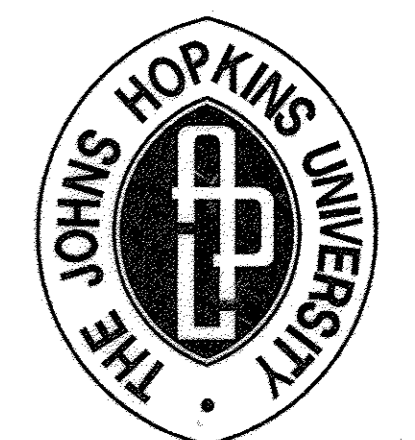


Revision: Dated 01-10-2008 by: Guback, Little and S-17, Weber PA. 3900 National Blvd Suite 250 Burtonville, MD 20866



Add Retaining Wall #8	10/15/08
Exterior Equip. 222	10/15/08
FUTURE BRIDGE LINK	10/25/08
RETAINING WALL DETAIL	10/25/08
G BID SET	3/24/09

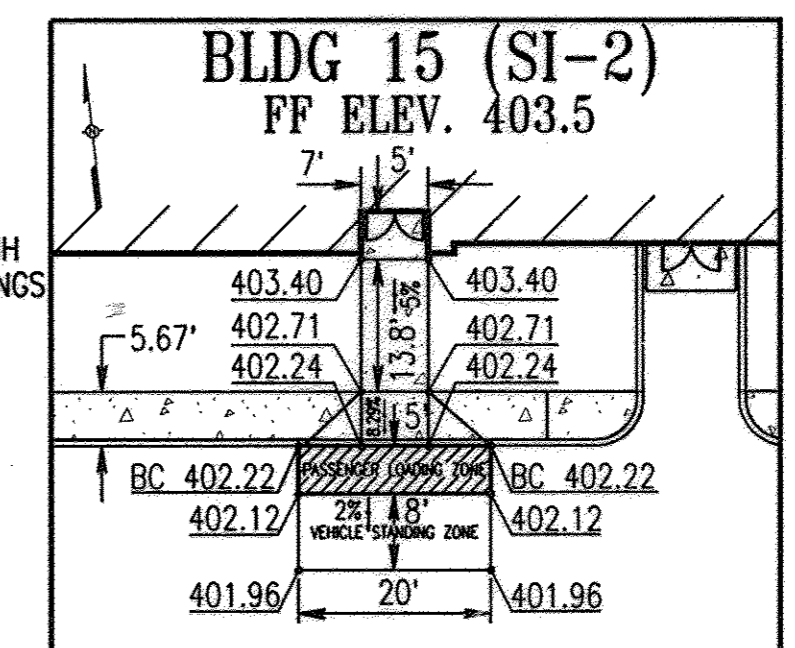
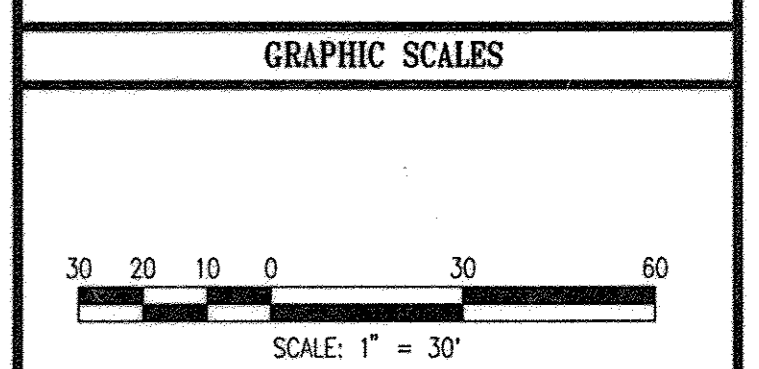
THE JOHNS HOPKINS UNIVERSITY
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 LAUREL MARYLAND 20723-6099



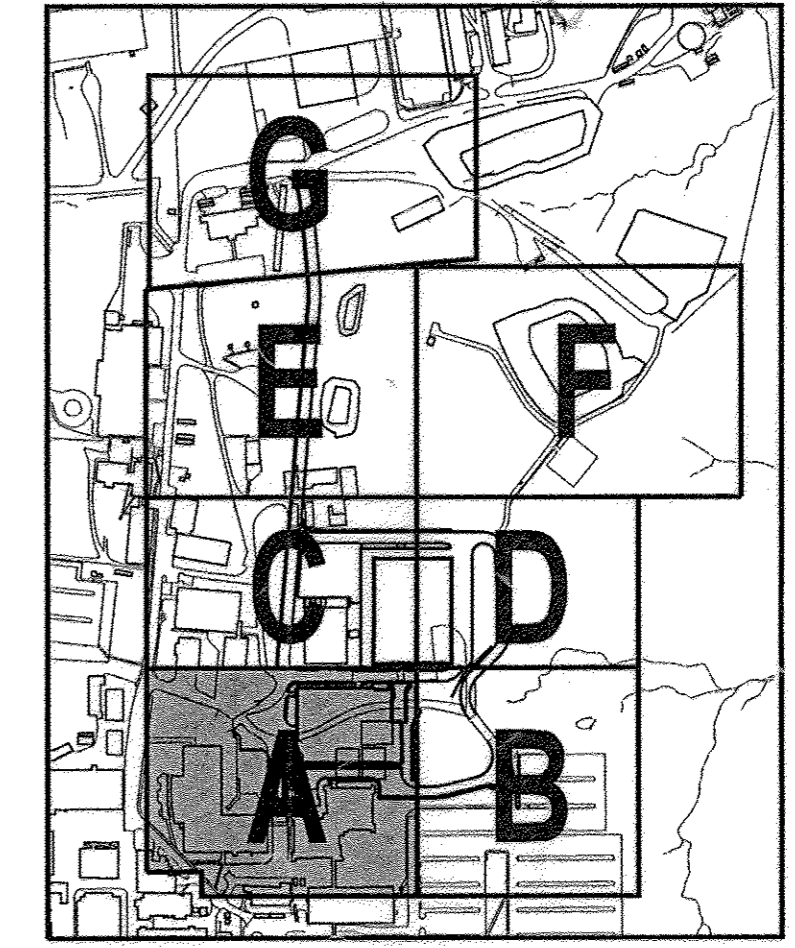
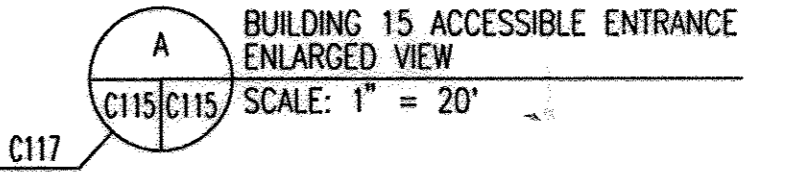
SYSTEMS INTEGRATION BUILDINGS AND VAN PAD

SDP SET

JHU/APL INTERNAL USE
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NOTE: SLOPE WITHIN PASSENGER LOADING ZONE AND VEHICLE STANDING ZONE SHALL NOT EXCEED 2% IN ANY DIRECTION

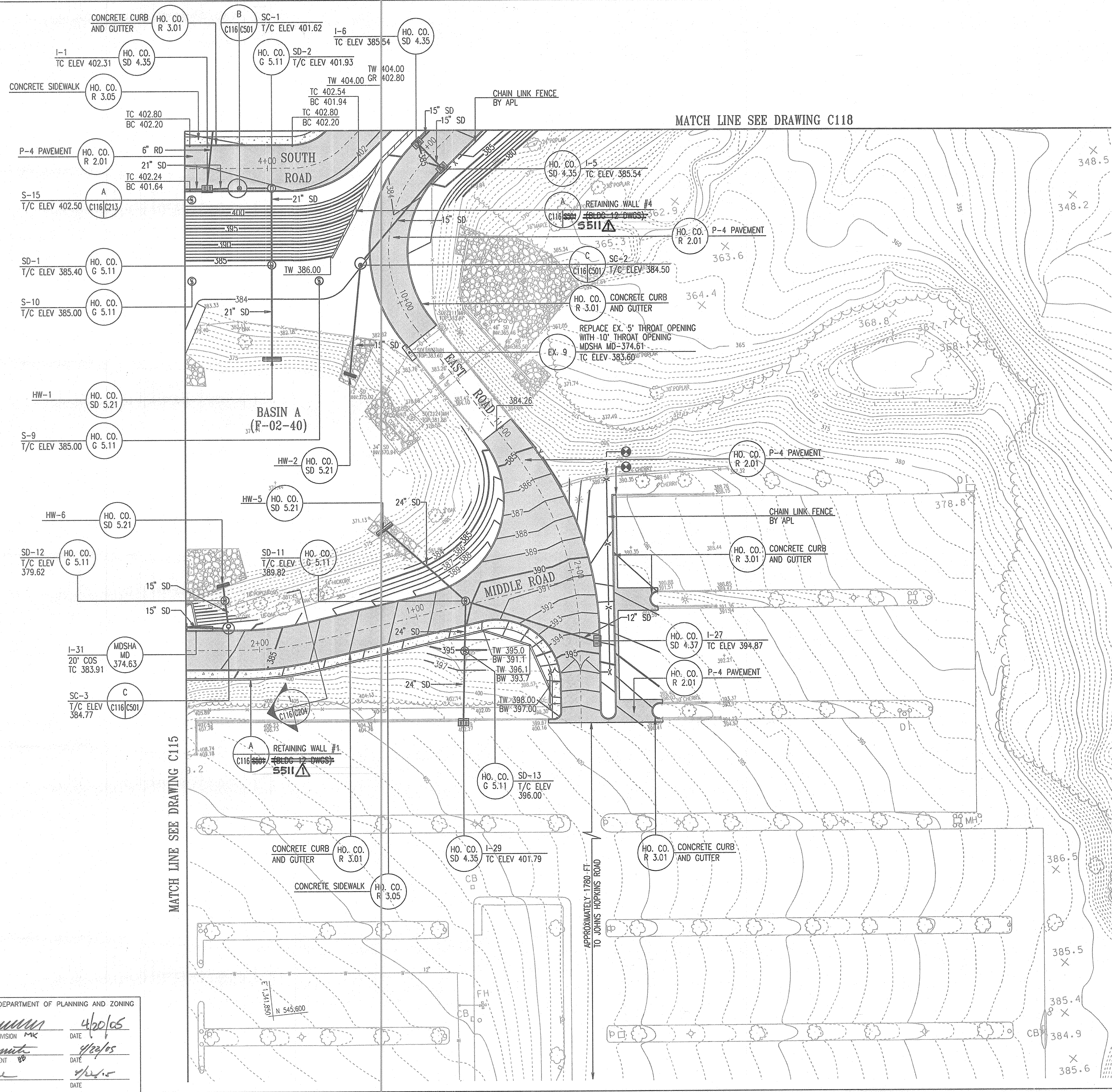


APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 [Signature] 4/24/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 [Signature] 4/24/05
 CHIEF, DIVISION OF LAND DEVELOPMENT
 [Signature] 4/24/05
 DIRECTOR

WR&A
 WHITMAN, REQUARDT AND ASSOCIATES, LLP
 801 S. CAROLINE STREET
 BALTIMORE, MARYLAND 21231
 410 - 235 - 3450

SITE PLAN 'A'	
DRAWING NO.	C115
Sheet 17 of 17	
Scale:	1"=30'
Designed By:	R.B.C.
Drawn By:	C.J.K.
Checked By:	A.U.O.
Date:	03/25/05

MARYLAND STATE COORDINATES
(NAD 83, 83/81)

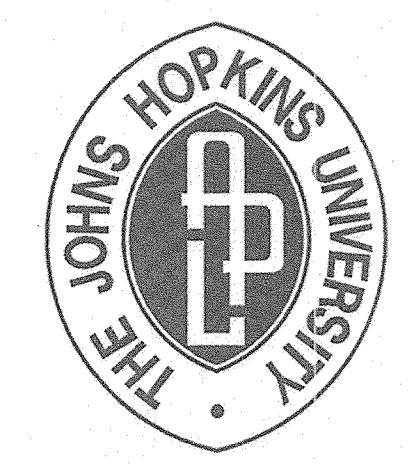


N 546,000
E 1,342,500

N 545,750
E 1,342,500

RETAINING WALL DETAIL 10/25/05	
G BID SET	3/24/05

THE JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
JOHNS HOPKINS ROAD
LAUREL MARYLAND 20723-6099

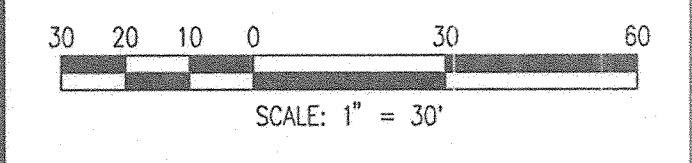


SYSTEMS INTEGRATION
BUILDINGS AND
VAN PAD

SDP SET

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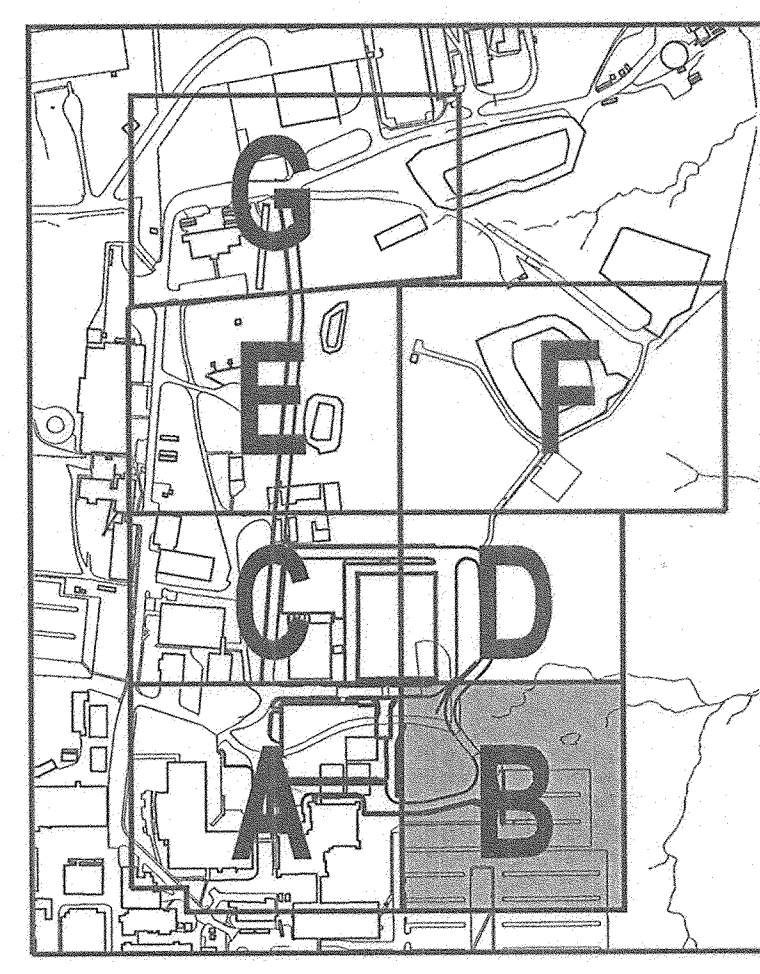
GRAPHIC SCALES



WHITMAN, REQUARDT AND ASSOCIATES, LLP
801 S. CAROLINE STREET
BALTIMORE, MARYLAND 21231
410 - 235 - 3450

SITE PLAN 'B'

	DRAWING NO.
	C116
Sheet 18 of 47	
Scale:	1"=30'
Designed By:	R.B.C.
Drawn By:	C.J.K.
Checked By:	A.U.O.
Date:	03/25/05



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

John D. Williams 4/20/05
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE

Condy Hammit 4/20/05
CHIEF, DIVISION OF LAND DEVELOPMENT WB DATE

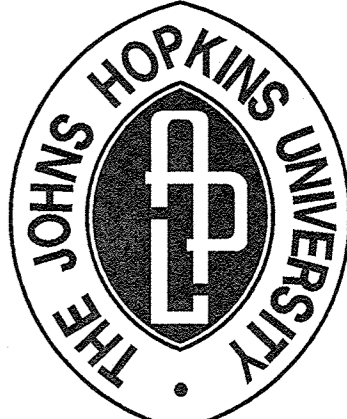
Paul L. Layell 4/22/05
DIRECTOR DATE

SDP-05-50

m:\81026\81026-C116.dgn
Thu Mar 31 08:06:12 2005

3	ADDED WALKWAY & STAIRS	9/27/17
2	REMOVE PAVING, ADD SIDEWALK	8/13/14
1	RETAINING WALL DETAIL	10/25/05
G	BID SET	3/24/05

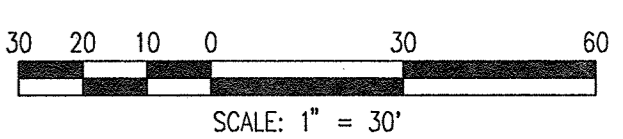
THE JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
 JOHNS HOPKINS ROAD
 LAUREL MARYLAND 20723-6099

THE JOHNS HOPKINS UNIVERSITY

SYSTEMS INTEGRATION BUILDINGS AND VAN PAD

SDP SET

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GRAPHIC SCALES



SCALE: 1" = 30'

WR&A
 WHITMAN, REQUARDT AND ASSOCIATES, LLP
 801 S. CAROLINE STREET
 BALTIMORE, MARYLAND 21231
 410 - 235 - 3450

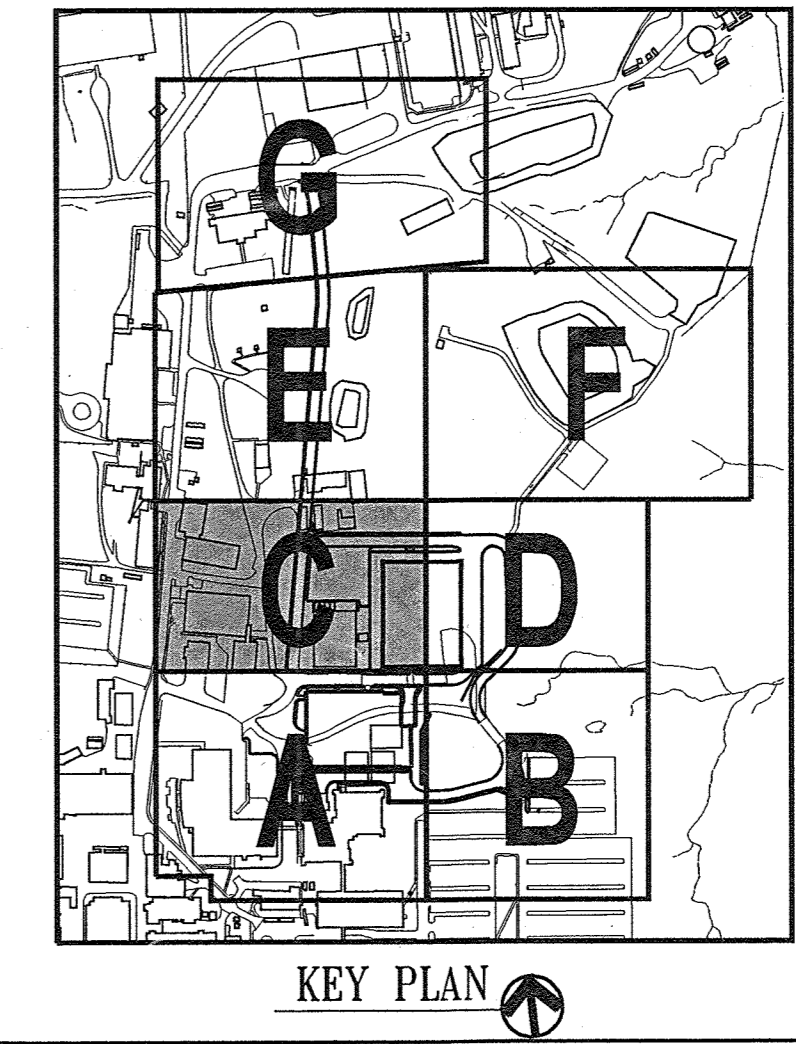
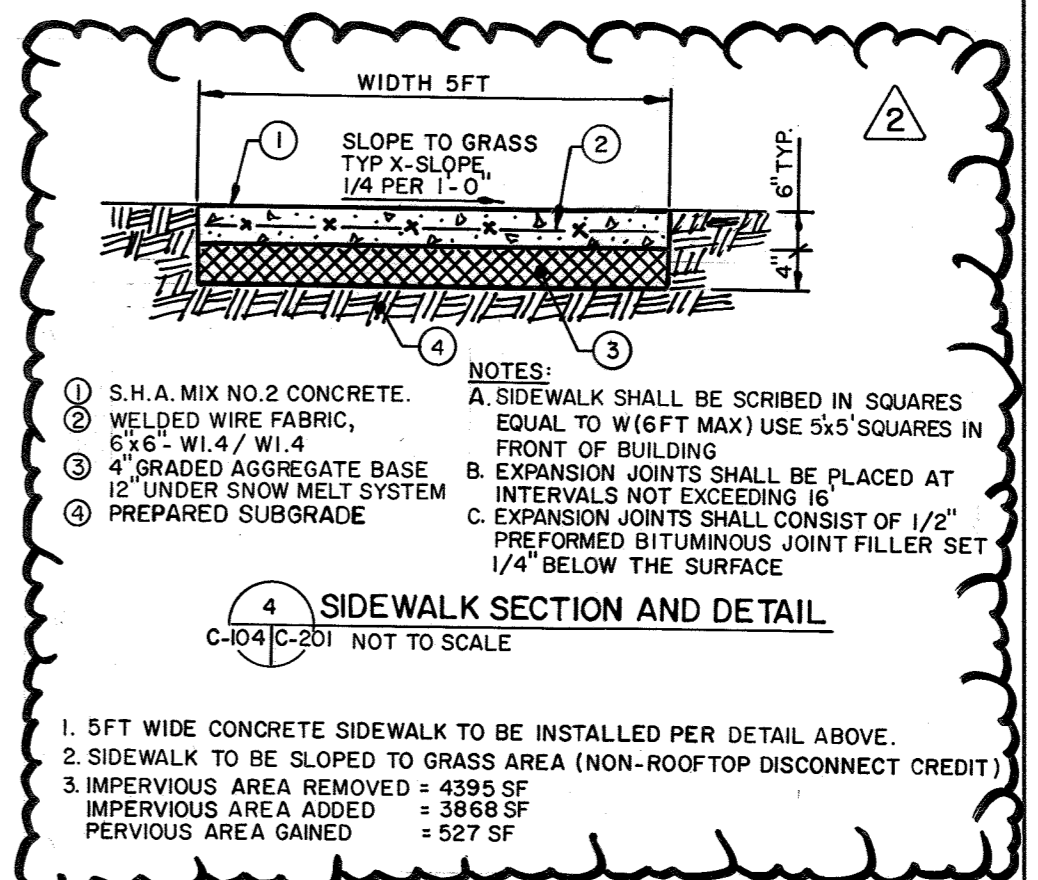
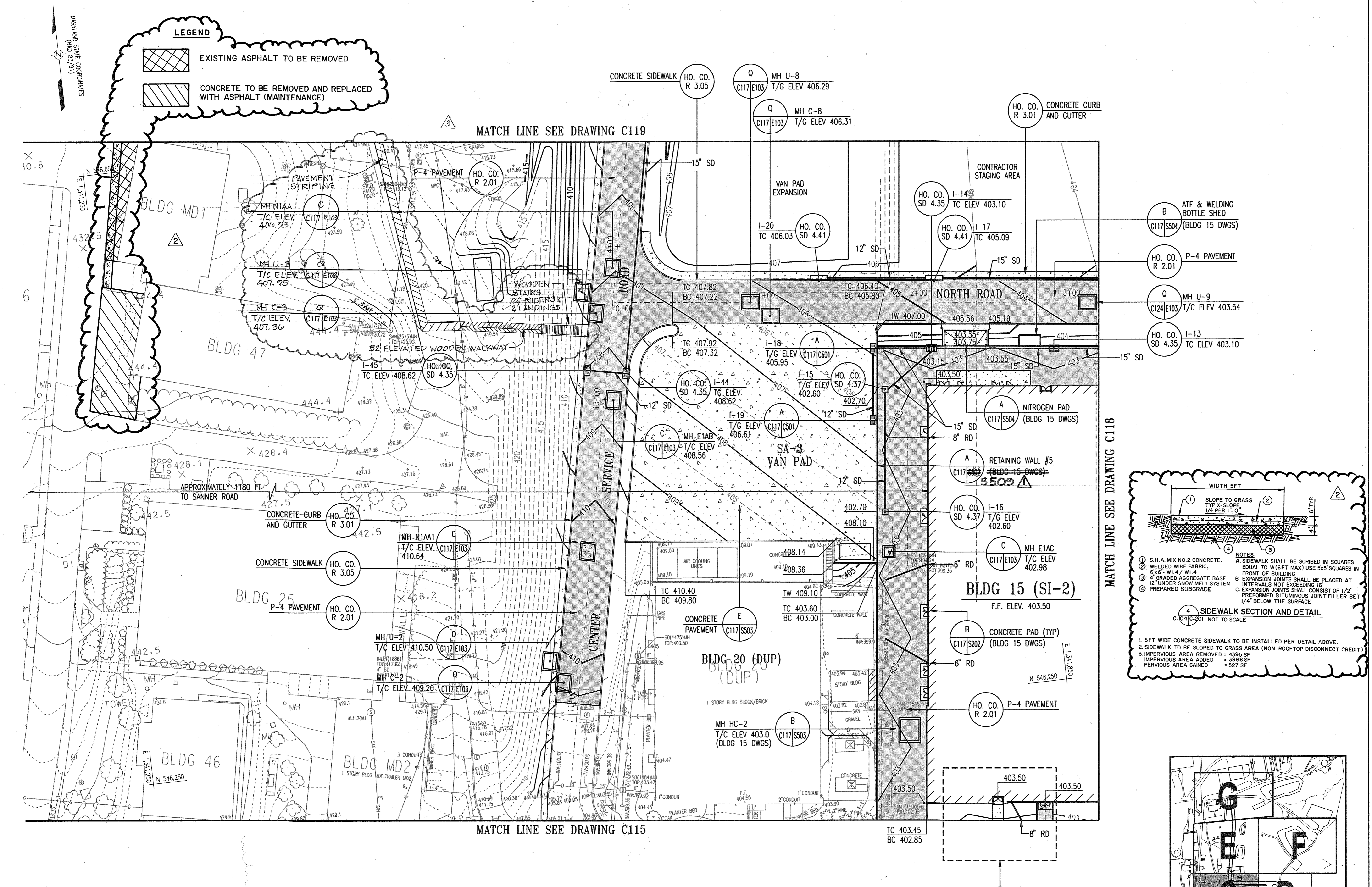
SITE PLAN 'C'

DRAWING NO. **C117**

Sheet 19 of 77

Scale: 1" = 30'

Designed By: R.B.C. Drawn By: C.J.K.
 Checked By: A.U.O. Date: 03/25/05

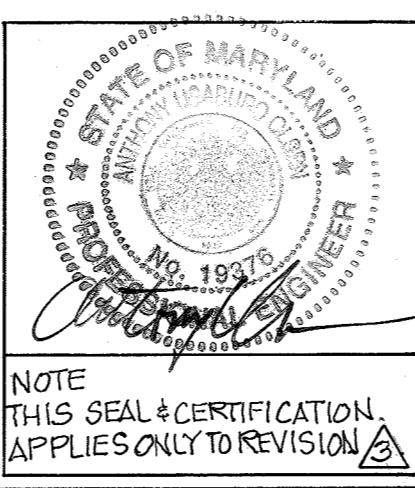


APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

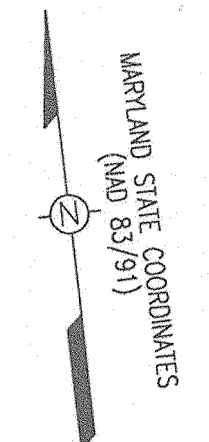
Howard County Seal
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DIRECTOR

DATE: 4/20/05
 DATE: 4/22/05
 DATE: 4/22/05

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NUMBER 19376 EXPIRATION DATE SEPTEMBER 22, 2021.



NOTE: TRASH AND WASTE FROM BUILDING 15 OPERATIONS WILL BE REMOVED DAILY BY APL.



RETAINING WALL DETAIL 10/25/05
G BID SET 3/24/05

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JOHNS HOPKINS ROAD
LAUREL MARYLAND 20723-6099

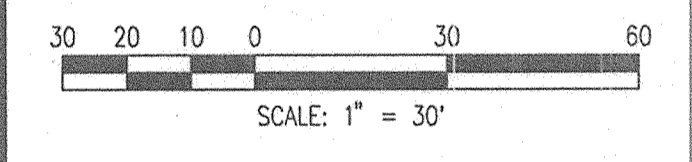


SYSTEMS INTEGRATION BUILDINGS AND VAN PAD

SDP SET

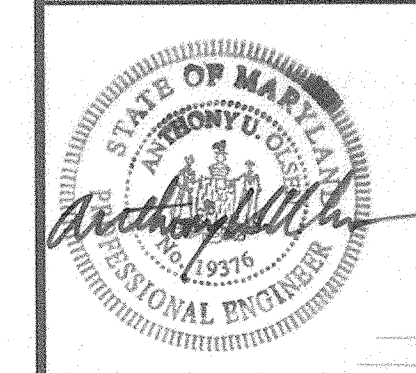
JHU/APL INTERNAL USE
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GRAPHIC SCALES



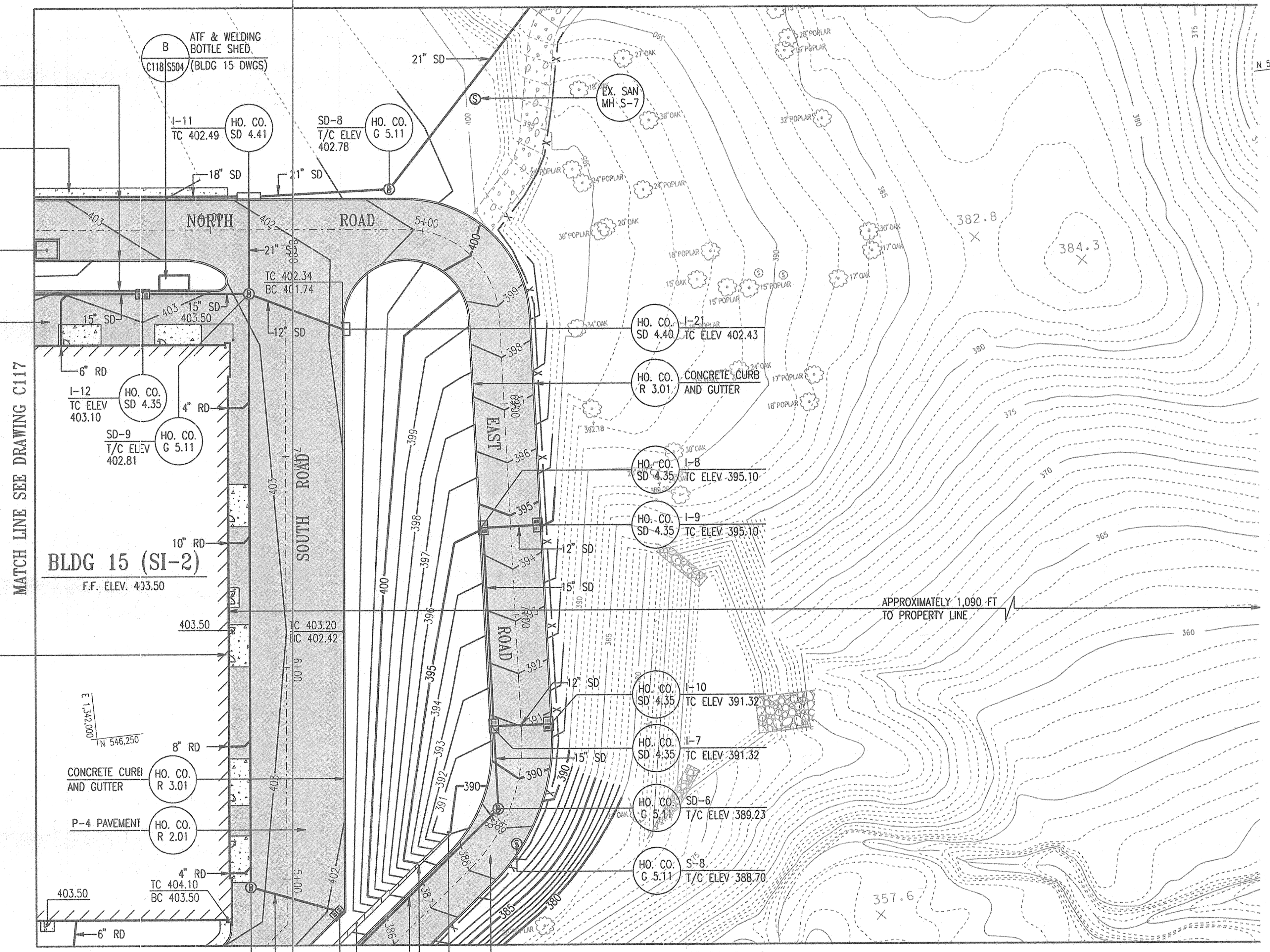
WHITMAN, REQUARDT AND ASSOCIATES, LLP
801 S. CAROLINE STREET
BALTIMORE, MARYLAND 21231
410 - 235 - 3450

SITE PLAN 'D'



DRAWING NO.
C118
Sheet 20 of 27
Scale: 1"=30'
Designed By: R.B.C. Drawn By: C.J.K.
Checked By: A.U.O. Date: 03/25/05

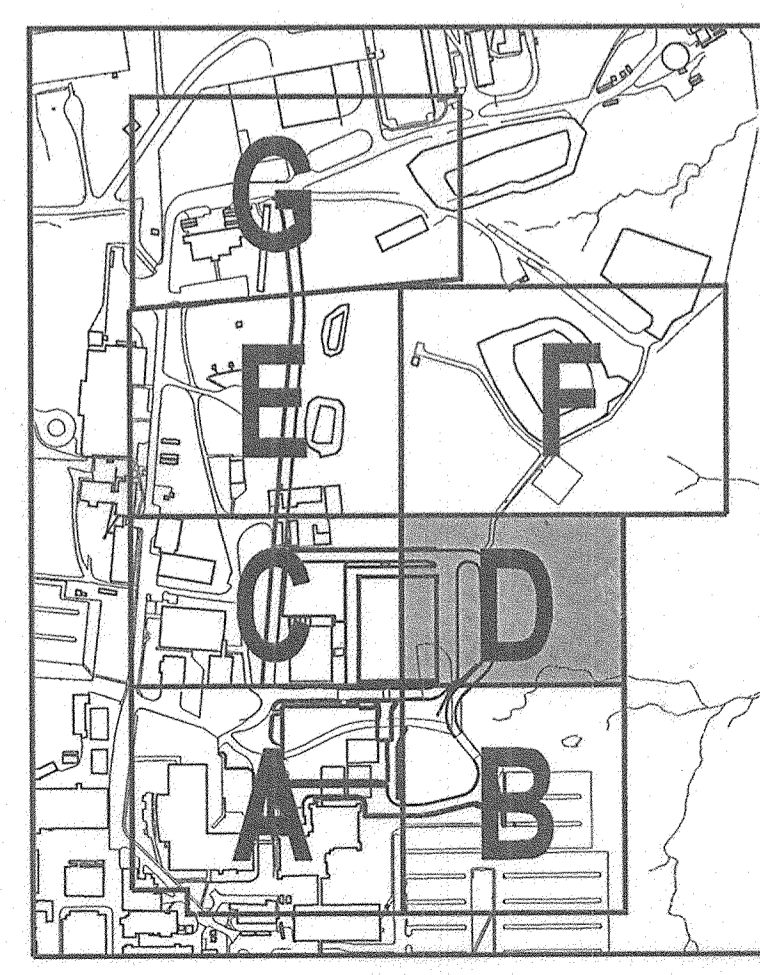
MATCH LINE SEE DRAWING C120



MATCH LINE SEE DRAWING C117

MATCH LINE SEE DRAWING C116

APPROXIMATELY 1,090 FT TO PROPERTY LINE



KEY PLAN

SDP-05-60

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
[Signature] 4/20/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
[Signature] 4/20/05
 CHIEF, DIVISION OF LAND DEVELOPMENT
[Signature]
 DIRECTOR

RETAINING WALL #4
(BLDG 15 DWGS)
C118 5511

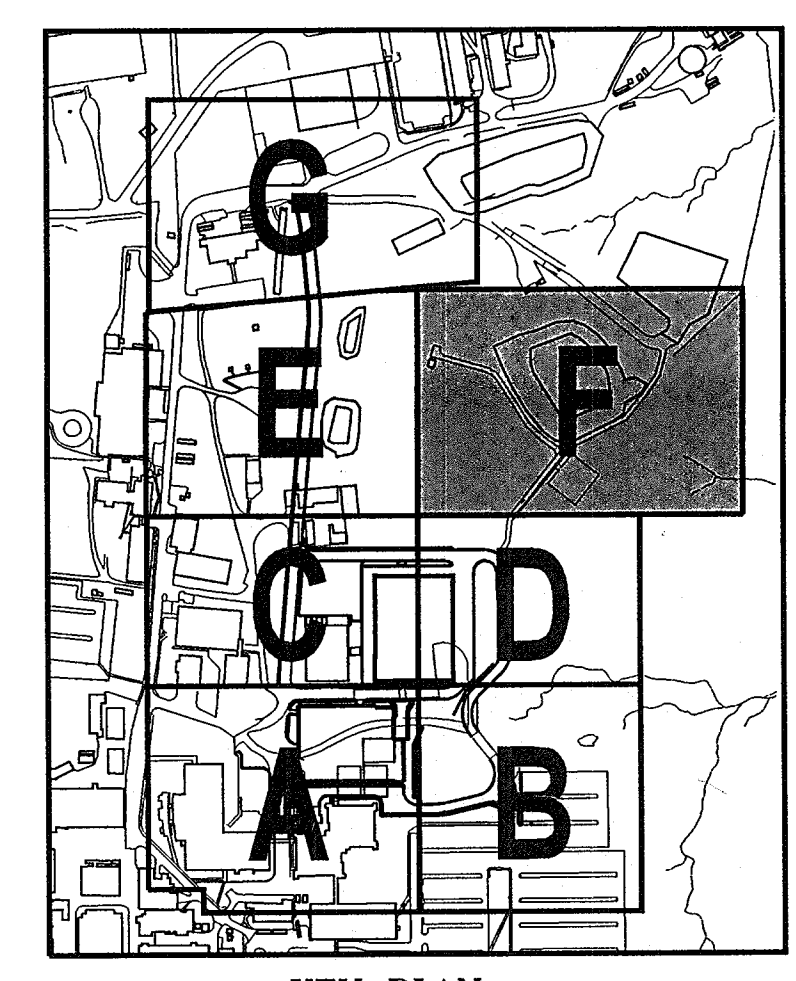


WARDING SITE COORDINATES
(NAD 83/91)

MATCH LINE SEE DRAWING C119

MATCH LINE SEE DRAWING C118

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Michael Damann 4/20/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
Cathy Klement 4/22/05
 CHIEF, DIVISION OF LAND DEVELOPMENT
M. V. ... 4/22/05
 DIRECTOR



KEY PLAN

SDP-05-50

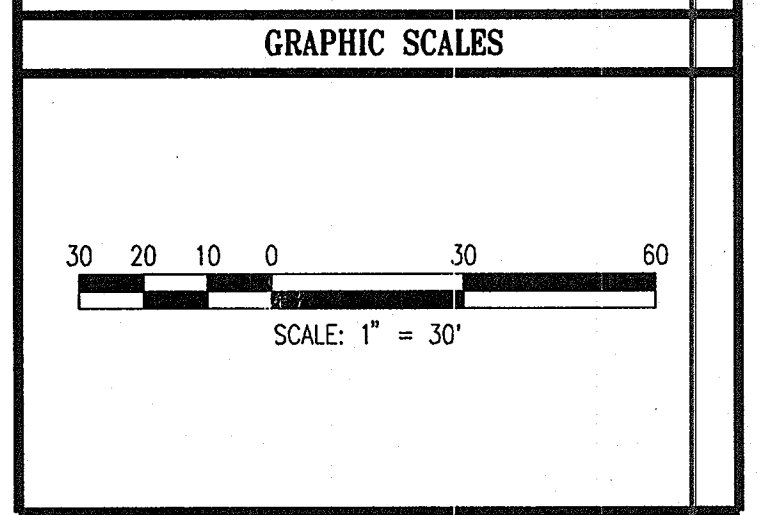
ADD RETAINING WALL SHEETS	10/25/05
G RID SET	3/24/06

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SDP SET

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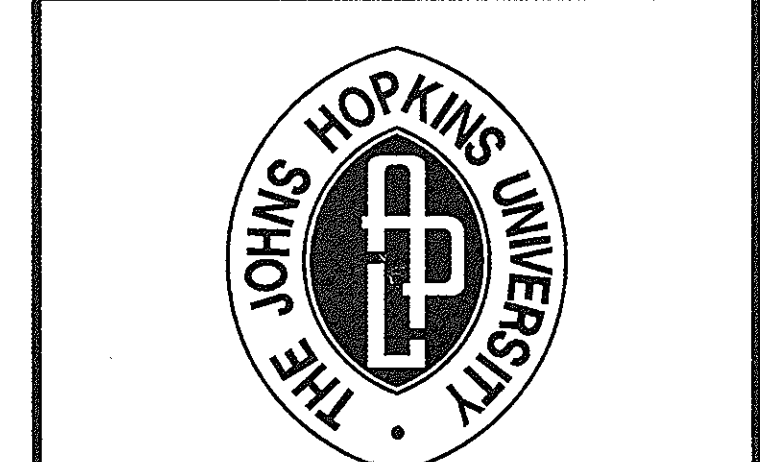
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 801 S. CAROLINE STREET
 BALTIMORE, MARYLAND 21231
 410 - 235 - 3450

SITE PLAN 'F'	
	DRAWING NO. C120
	Sheet 22 of 27
Scale: 1"=30'	Designed By: R.B.C. Drawn By: C.J.K.
Checked By: A.U.O.	Date: 03/25/06



See Supplemental Sheet C121A	8-2-12
BUILDING #50	11/14/07
ADD RETAINING WALL SHEETS	10/25/05
G BID SET	3/24/05

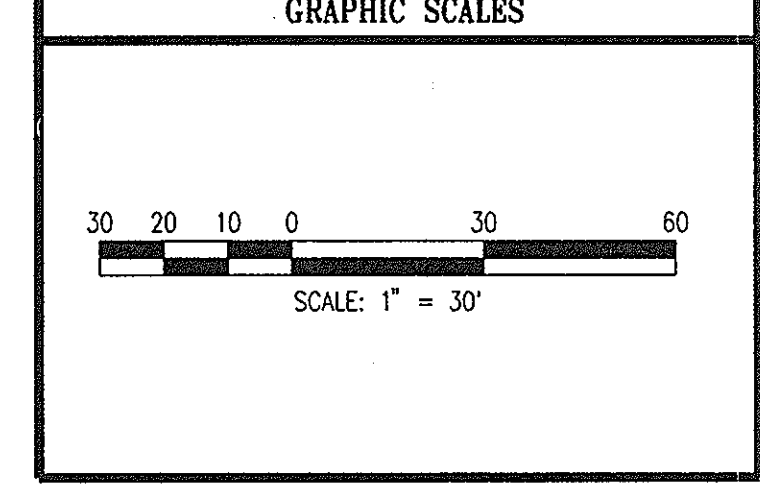
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SYSTEMS INTEGRATION BUILDINGS AND VAN PAD

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SITE PLAN 'G'

DRAWING NO. **C121**
 Sheet 23 of 47

Scale: 1"=30'
 Designed By: R.B.C. Drawn By: C.J.K.
 Checked By: A.U.O. Date: 03/25/05

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chris Dammann 4/20/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

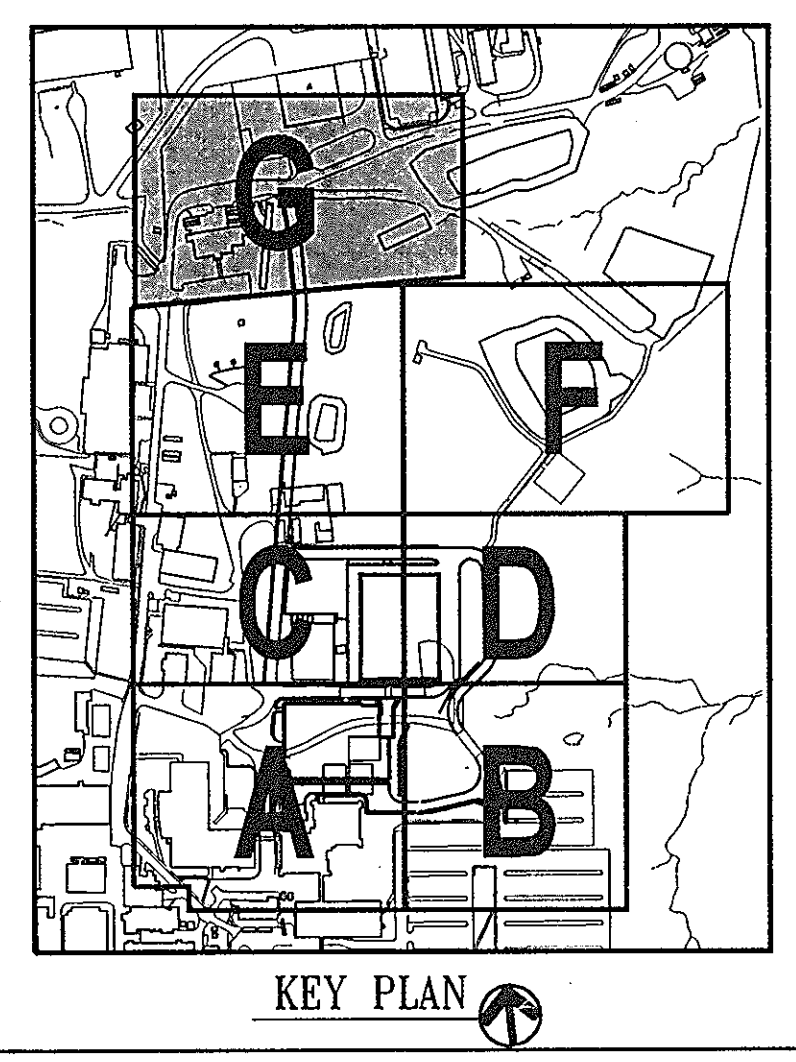
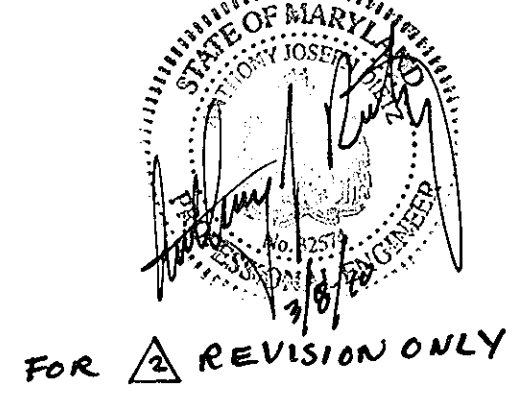
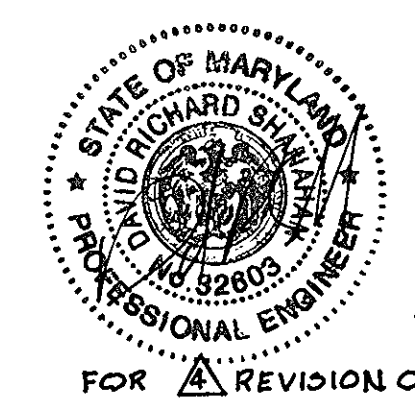
Condy Harvath 4/20/05
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

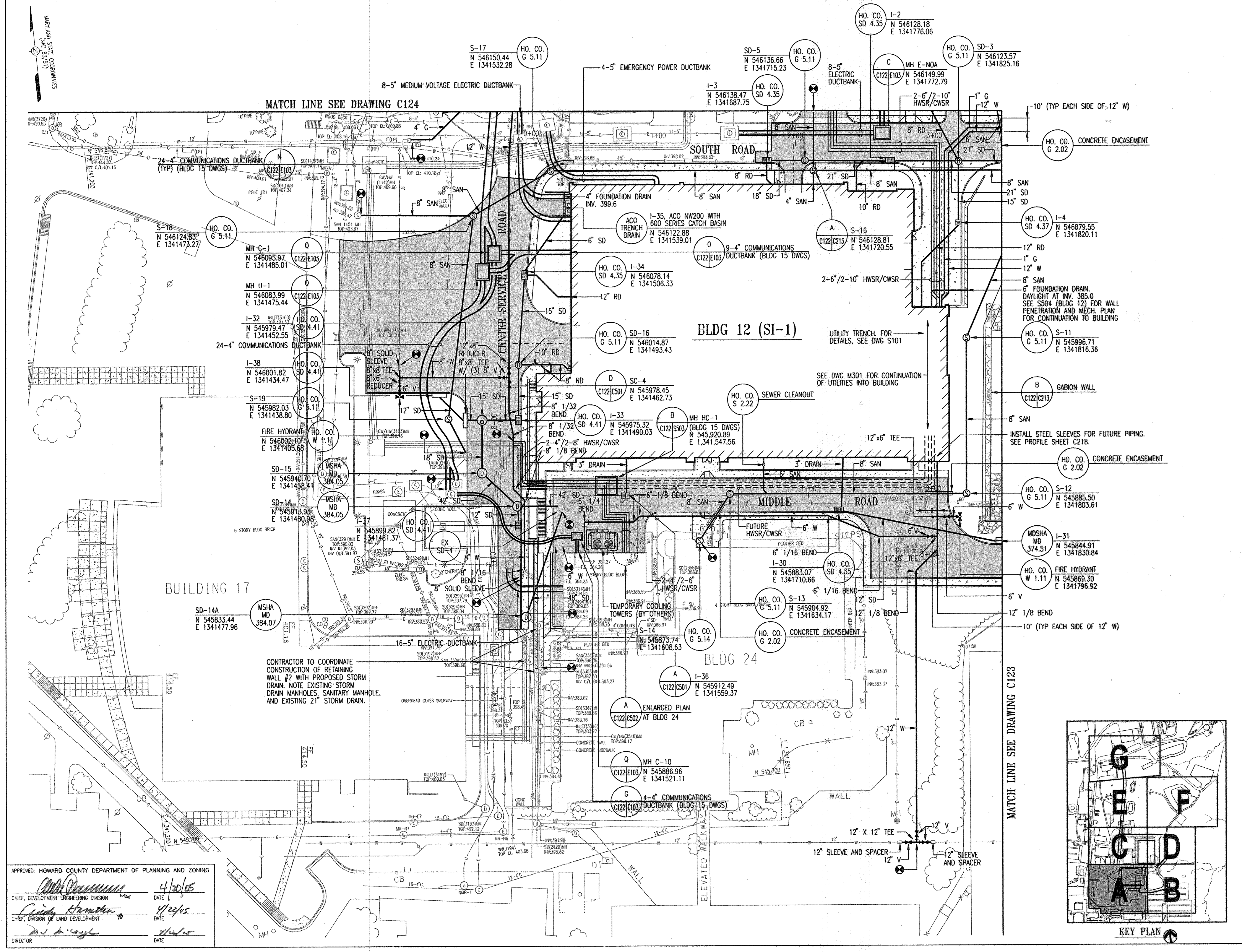
David A. Coyle 4/20/05
 DIRECTOR DATE

SEE SUPPLEMENTAL SHEET C121A FOR REVISIONS

- REINFORCED CONCRETE PAVING
- HO.CO. R-2.01 P-A PAVEMENT
- REPAVE AS NECESSARY (MATCH EXISTING)

NOTE
 ENTIRE LAWN AREA TO BE PROVIDED WITH A MINIMUM 4" SCREENED TOPSOIL.



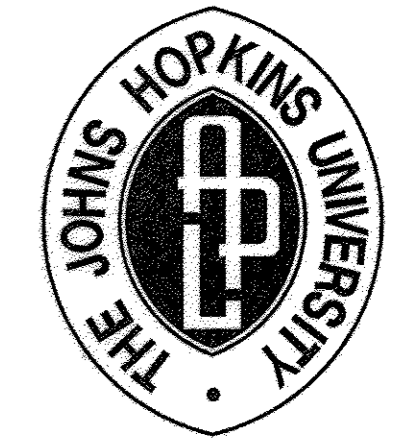


APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 4/20/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 [Signature] 4/20/05
 CHIEF, DIVISION OF LAND DEVELOPMENT
 [Signature] 4/20/05
 DIRECTOR

ADD RETAINING WALL SHEETS	10/25/05
G BID SET	3/24/05

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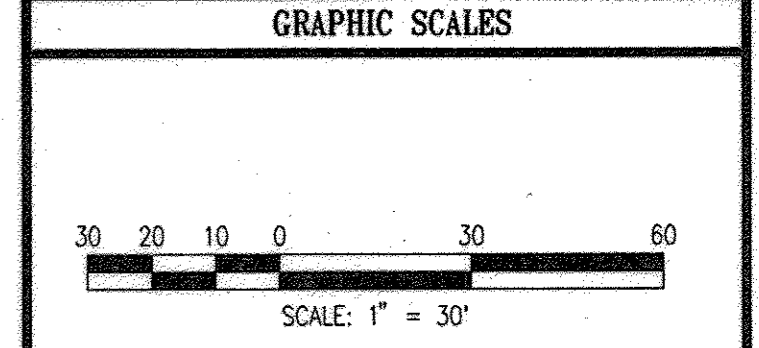


SYSTEMS INTEGRATION BUILDINGS AND VAN PAD

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UTILITY PLAN 'A'

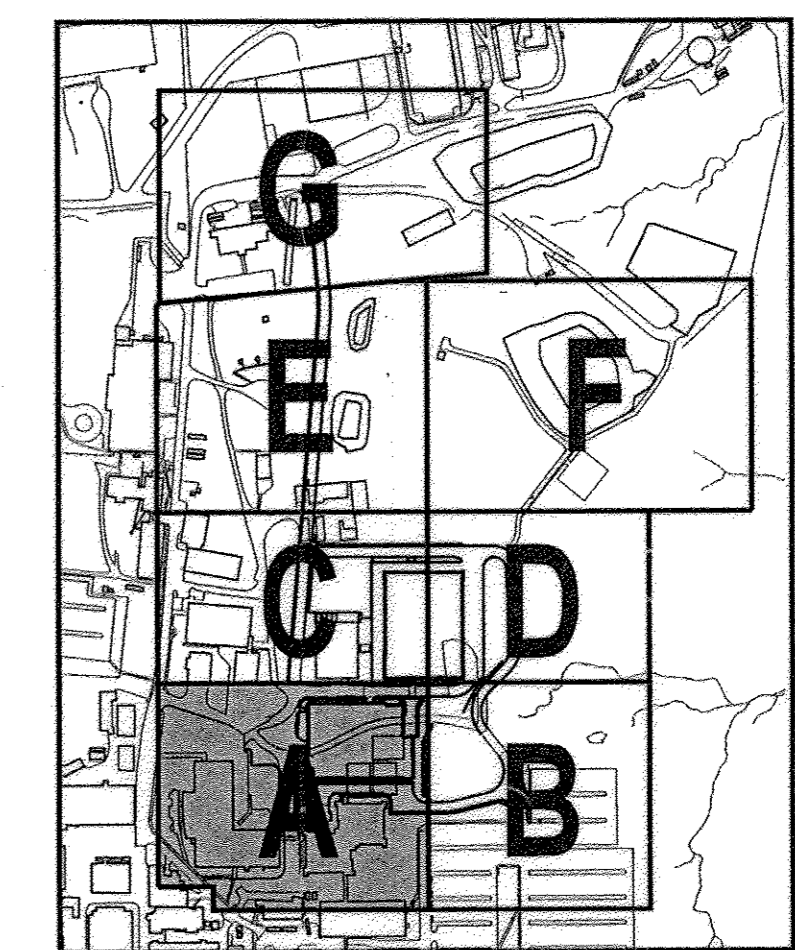
DRAWING NO. **C122**

Sheet 24 of 77

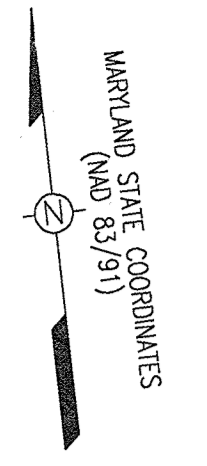
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Designed By: R.B.C. Drawn By: C.J.K.

Checked By: A.U.O. Date: 03/25/05

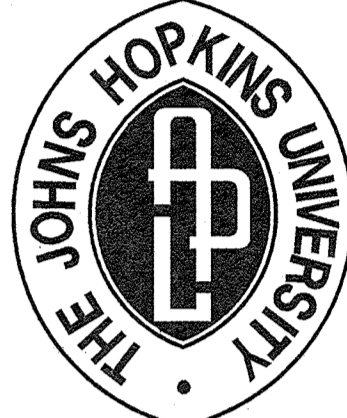


SDP-05-50



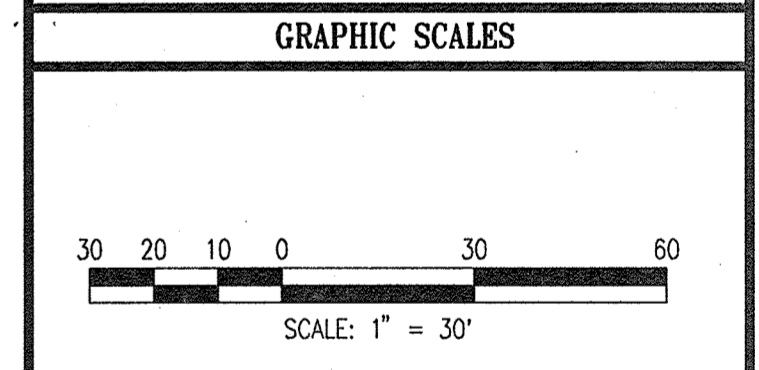
Z	ADDED WALKWAY & STAIRS	7/27/17
A	ADD RETAINING WALL SHEETS	10/25/16
G	BD SET	3/24/05

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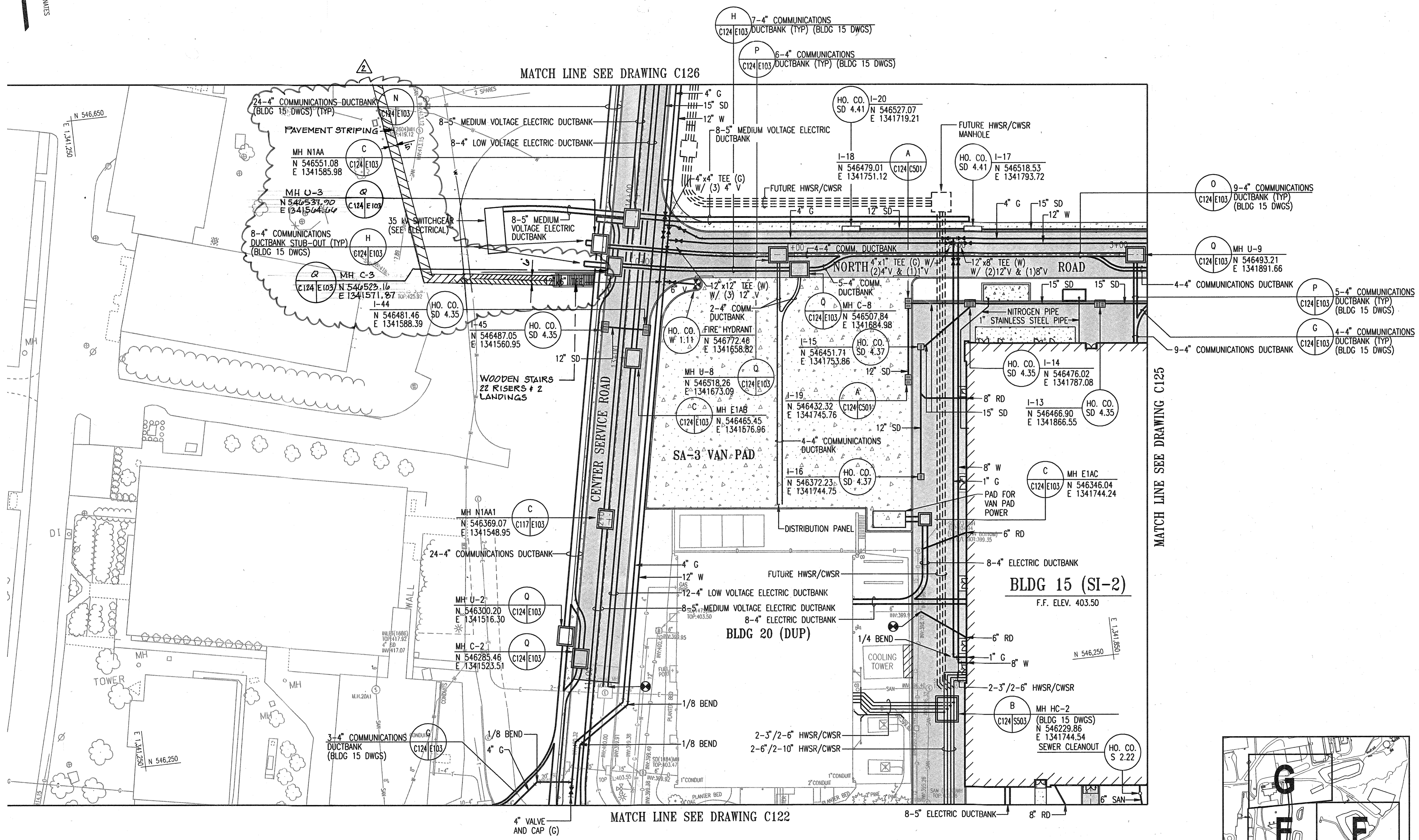
UTILITY PLAN 'C'

DRAWING NO.
C124

Sheet 26 of 27

Scale: 1"=30'

Designed By: R.B.C. Drawn By: C.J.K.
 Checked By: A.U.O. Date: 03/25/05

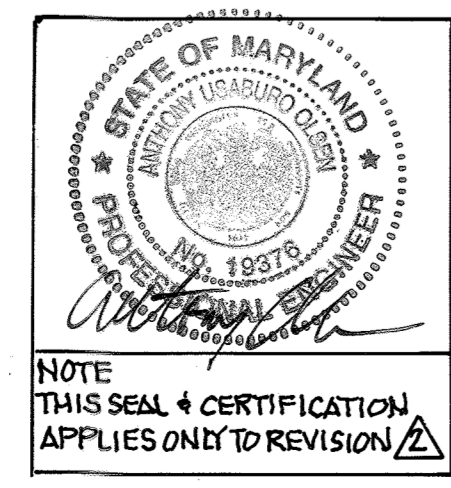


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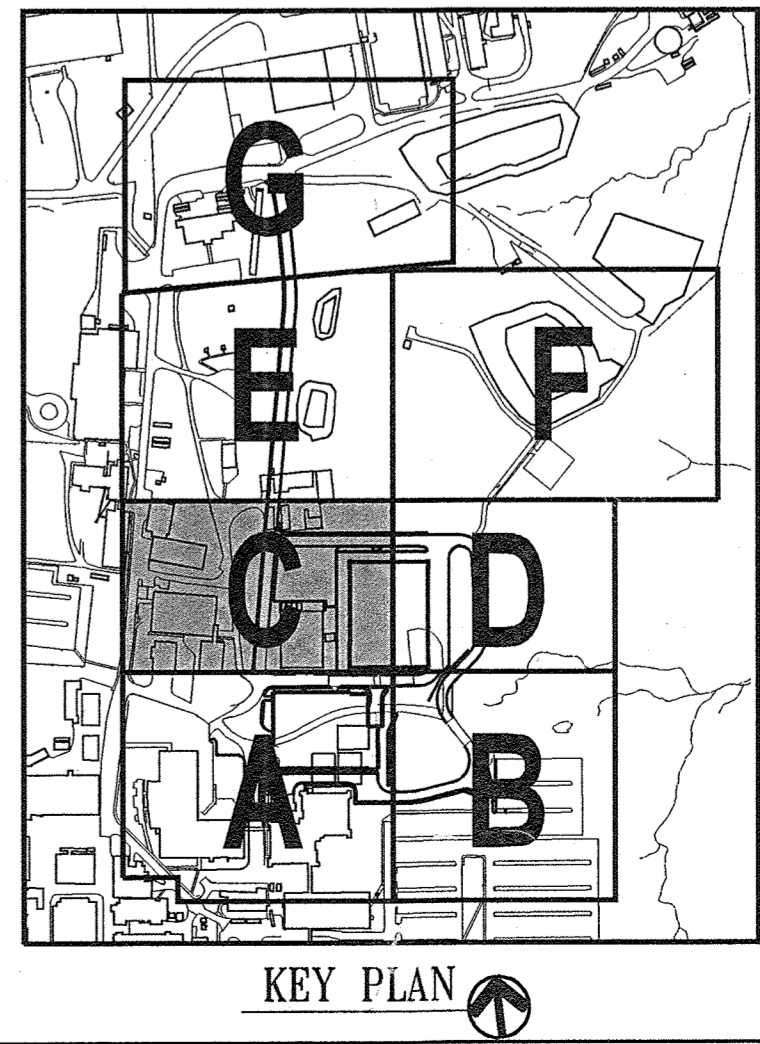
Howard County Seal
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 4/20/05

*Chad K. K...
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 4/20/05*

*David J. ...
 DIRECTOR
 DATE: 4/20/05*

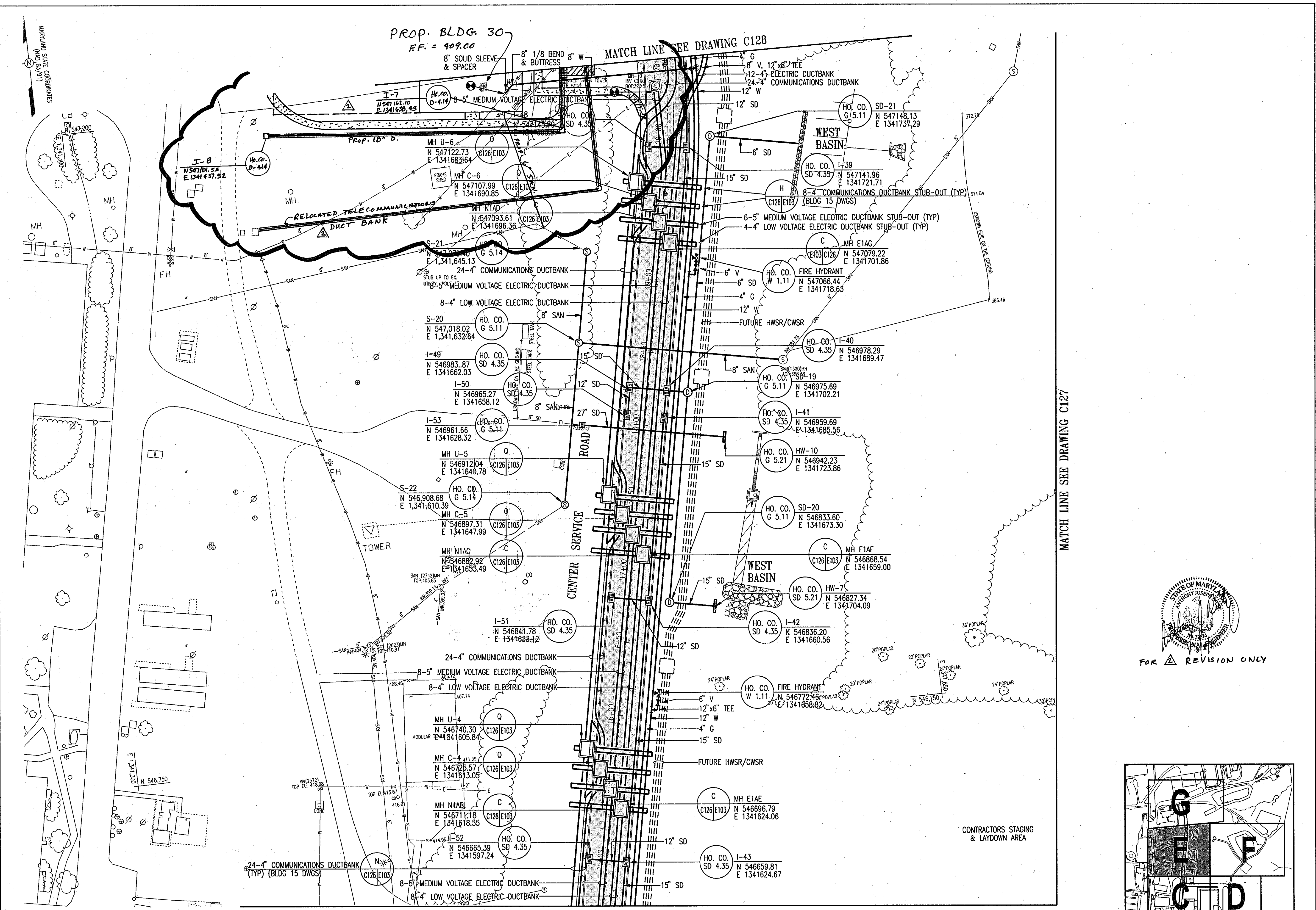


I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE NUMBER 19376 EXPIRATION DATE SEPTEMBER 22, 2021.



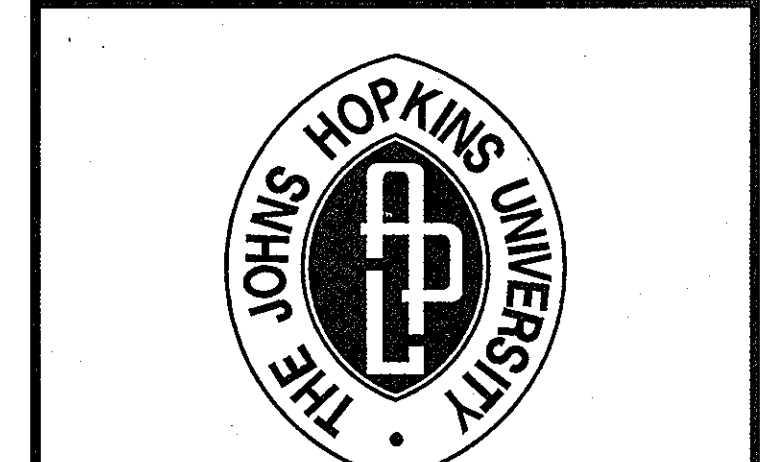
SDP-05-50

m:\81026\81026-C124.dgn
 Thu Mar 31 08:06:52 2005



▲ BUILDING #30	12/14/04
▲ ADD RETAINING WALL SHEETS	10/25/05
G BID SET	3/24/05

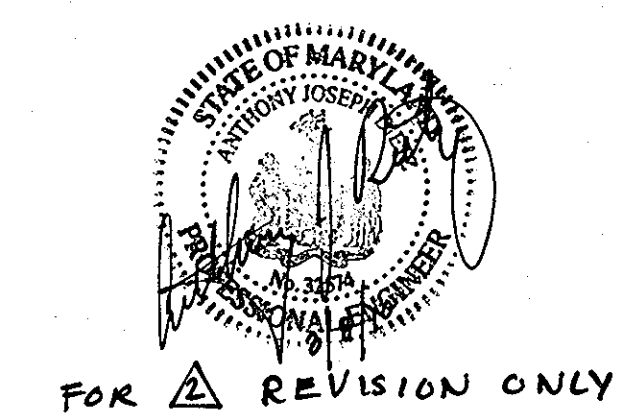
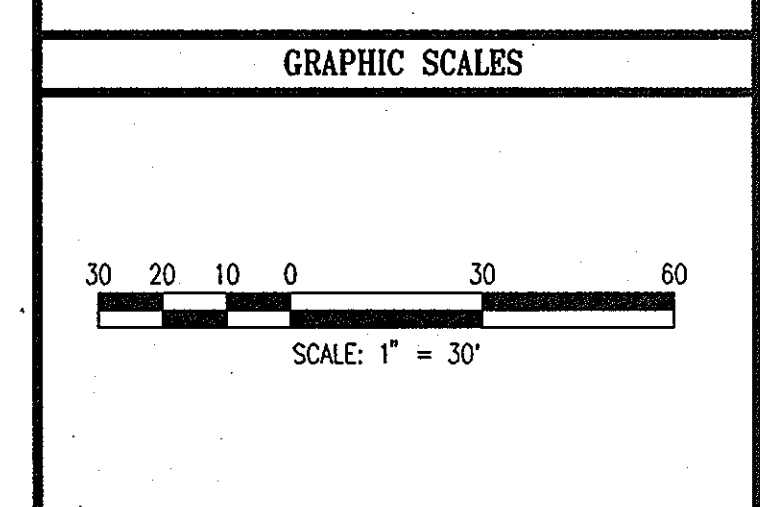
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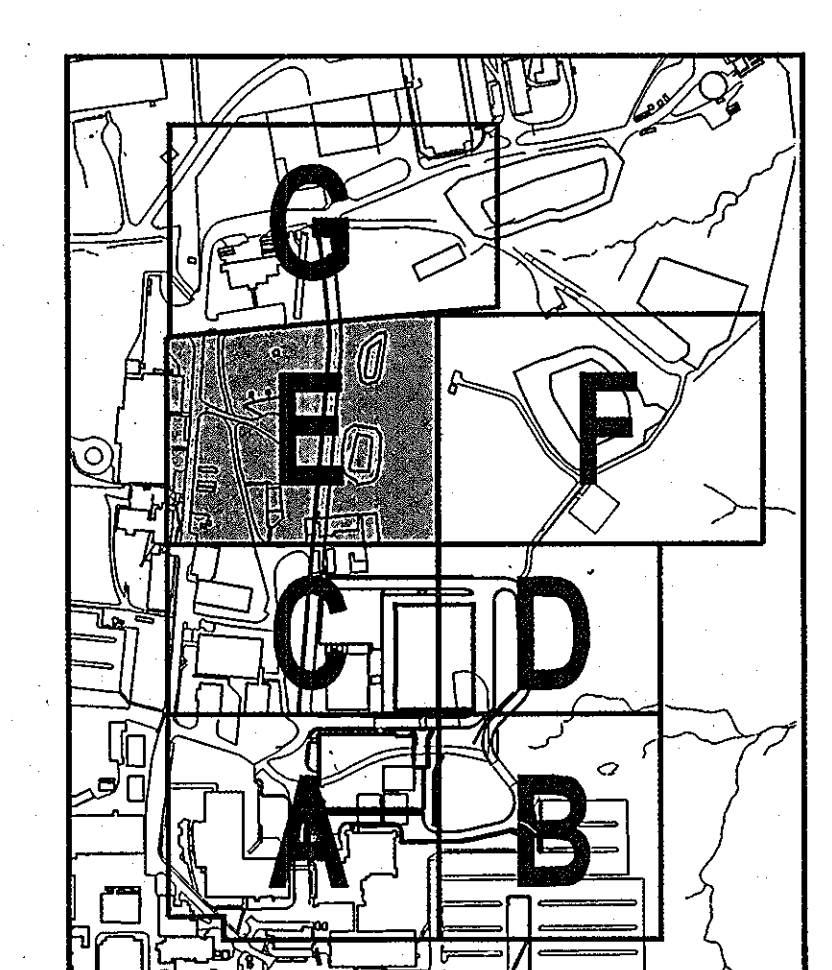
SYSTEMS INTEGRATION BUILDINGS AND VAN PAD

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FOR ▲ REVISION ONLY



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UTILITY PLAN 'E'

	DRAWING NO.
	C126
Sheet 28 of 77	
Scale: 1"=30'	
Designed By: R.B.C.	Drawn By: C.J.K.
Checked By: A.U.O.	Date: 03/25/05

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Mark Dammann 4/20/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Conrad Klumpp 4/24/05
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

David M. Leyle 4/22/05
 DIRECTOR DATE

MATCH LINE SEE DRAWING C124

MATCH LINE SEE DRAWING C127

CONTRACTORS STAGING & LAYDOWN AREA

MARYLAND STATE COORDINATES
(NAD 83/91)

MATCH LINE SEE DRAWING C126

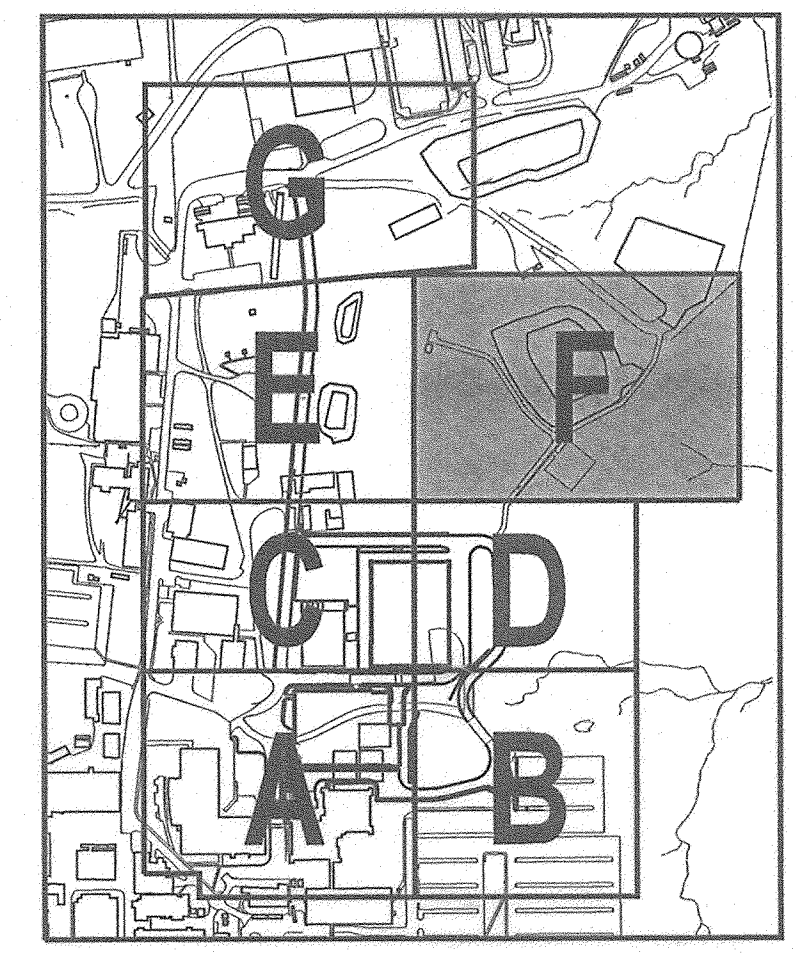


HW-3
N 546796.41
E 1342334.83
HO. CO. SD 5.21

SD-4
N 546772.29
E 1342333.80
HO. CO. G 5.11

SD-7
N 546732.51
E 1342300.82
HO. CO. G 5.11

MATCH LINE SEE DRAWING C125



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 4/20/05
CHIEF, DEVELOPMENT ENGINEERING DIVISION

[Signature] 4/23/05
CHIEF, DIVISION OF LAND DEVELOPMENT

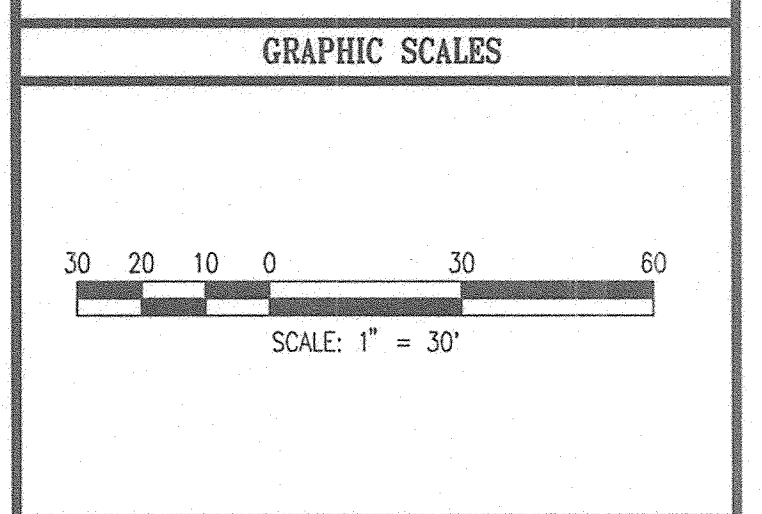
[Signature] 4/21/05
DIRECTOR

ADD RETAINING WALL SHEETS	10/25/05
C BID SET	3/24/05

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APPLIED PHYSICS LABORATORY
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LAUREL MARYLAND 20723-6099

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SYSTEMS INTEGRATION BUILDINGS AND VAN PAD
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UTILITY PLAN 'F'

DRAWING NO. C127
Sheet 29 of 77

Scale: 1"=30'
Designed By: R.B.C. Drawn By: C.J.K.
Checked By: A.U.O. Date: 03/25/05

SDP-05-50

m:\81026\81026-C127.dgn
Fri Mar 25 08:06:58 2005

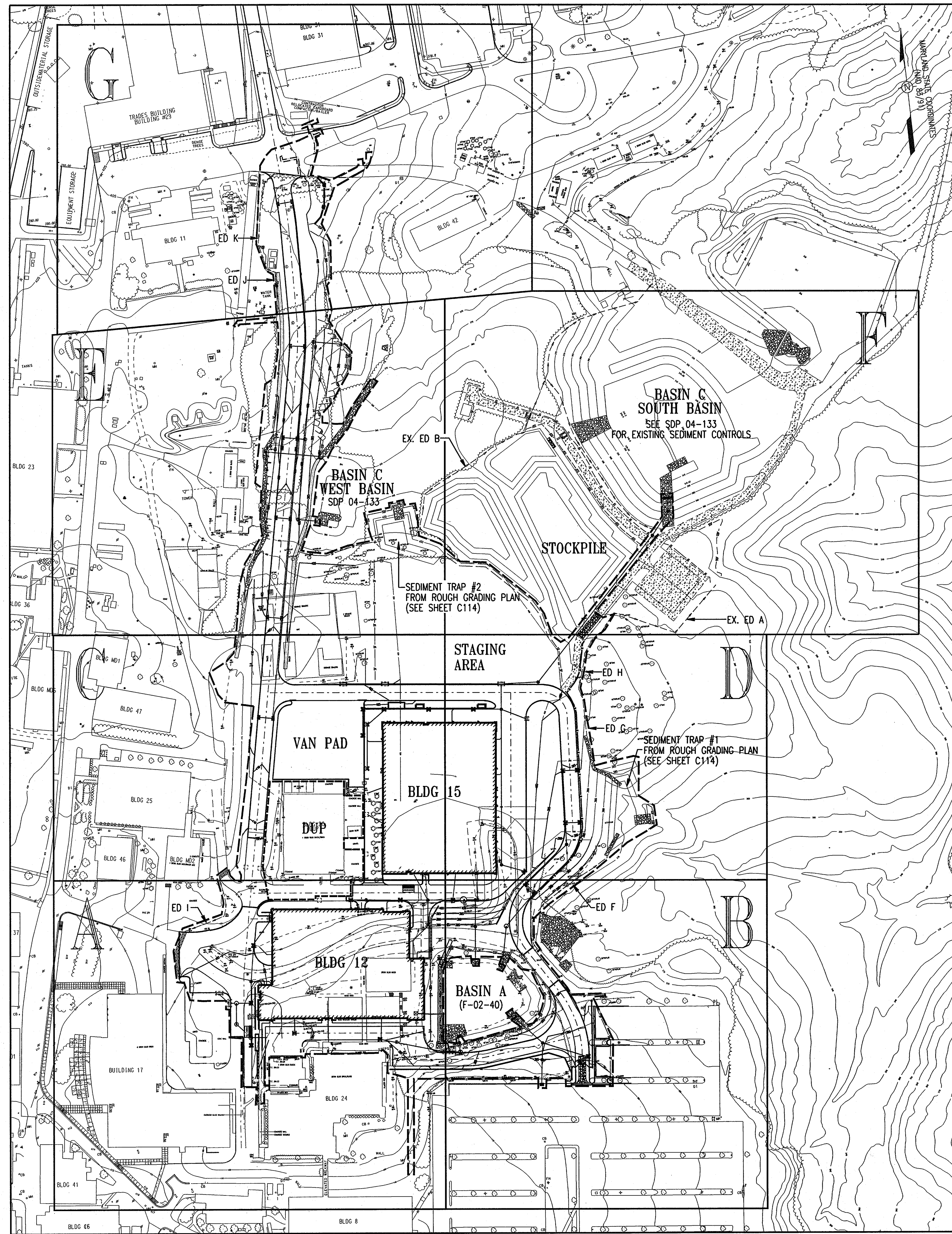
SEQUENCE OF CONSTRUCTION

1. NOTIFY THE SEDIMENT CONTROL INSPECTION OFFICE 24 HOURS PRIOR TO CONSTRUCTION.
2. CONSTRUCT SEDIMENT TRAPS #1 AND #2 AS SHOWN ON SHEET C114. UPON COMPLETION OF TRAPS AND WITH APPROVAL OF SEDIMENT CONTROL INSPECTOR, CLEAR AND GRUB AS NECESSARY TO INSTALL PERIMETER CONTROLS FOR ROUGH GRADING. INSTALL STABILIZED CONSTRUCTION ENTRANCE, SILT FENCE AND EARTH DIKE D, E, F, G, H. THE EARTH DIKE TO EXISTING EARTH DIKE A, B, C UNDER SDP 04-133 AS SHOWN. MAINTAIN EXISTING EARTH DIKE A AND B FOR DURATION OF PROJECT. MAINTAIN POSITIVE DRAINAGE ALONG ALL EARTH DIKE TO DIRECT RUNOFF TO TRAPS DURING CONSTRUCTION. (3 WEEKS)
3. PERFORM ROUGH GRADING OPERATIONS TO LINES AND GRADES AS SHOWN ON C114. CLEAR AND DEMOLISH SITE AS NECESSARY. UTILIZE STOCKPILE UNDER SDP 04-133 AS NECESSARY FOR APPROVED EXCESS AND CUTS AND FILLS. ADJUST EARTH DIKE C THROUGH CONTRACTOR STAGING AREA AS NECESSARY DURING CONSTRUCTION. (3 WEEKS)
4. CLEAR AND GRUB AS NECESSARY TO INSTALL REMAINDER OF PERIMETER SEDIMENT CONTROL DEVICES AS SHOWN ON SHEETS C129 THRU C136. INSTALL SILT FENCE, SUPER SILT FENCE, EARTH DIKE I, AND TEMPORARY SWALE. MAINTAIN EXISTING SEDIMENT CONTROL DEVICES AND TRAPS. REMOVE EARTH DIKE C THROUGH STAGING AREA UPON COMPLETION OF TEMPORARY SWALE ALONG SOUTHWEST LIMIT OF STOCKPILE. OBTAIN APPROVAL FROM SEDIMENT CONTROL INSPECTOR BEFORE PROCEEDING. (1 WEEK)
5. PERFORM GRADING OF SITE. EXCESS SPOIL MATERIAL SHALL BE TRANSPORTED TO THE STOCKPILE AREA AS INDICATED ON THE PLAN. INSTALL SANITARY SEWER STARTING AT MANHOLE S-7. MAINTAIN POSITIVE DRAINAGE ALONG ALL EARTH DIKES AND SWALES. (4 WEEKS)
6. FOR GRADING OPERATIONS ALONG CENTER SERVICE ROAD, FIRST CONSTRUCT WEST BASIN SEDIMENT TRAP (SEE SDP-04-133) AND STORM DRAIN/INLET FROM I-53 TO HW-10. INSTALL EARTH DIKE J, K AND STANDARD INLET PROTECTION ON I-53. GRADE PERMANENT SWALE AND STABILIZE WITH EROSION CONTROL MATTING AND RIP RAP ON WEST SIDE OF ROAD TO DIVERT CLEAN WATER THROUGH I-53. INSTALL IMBRICATED SILT FENCE ADJACENT TO SWALE AND IMBRICATED SUPER SILT FENCE EAST OF CENTER SERVICE ROAD AS SHOWN. CONSTRUCT STORM DRAIN ALONG CENTER SERVICE ROAD TO WEST BASIN AND BIORETENTION. BLOCK BYPASS OPENING AT SD-19 TO BIORETENTION WITH BRICK AND MORTAR UNTIL PROJECT IS COMPLETE AND SITE HAS BEEN STABILIZED. PROCEED WITH UTILITY CONSTRUCTION AND GRADING UPON STABILIZATION OF PERMANENT SWALE. ADJUST SILT FENCING AS NECESSARY DURING GRADING. MAINTAIN BASIN C, WEST BASIN TRAP ACCORDING TO SDP-04-133. CONSTRUCT WEST BASIN BIORETENTION UPON STABILIZATION OF ALL DRAINAGE AREA TO BIORETENTION(6 WEEKS)
7. CONSTRUCT GABION WALL AT BASIN A, RETAINING WALL #1 AND RETAINING WALL #4. PERFORM CONTROLLED FILL OPERATIONS AS NEEDED TO INSTALL REMAINDER OF SANITARY SEWER. (6 WEEKS)
8. INSTALL REMAINDER OF STORM DRAIN AND UTILITIES. CONSTRUCT STORM DRAIN FROM HIGHEST UPSTREAM FIRST AND WORK DOWNSTREAM. IMMEDIATELY STABILIZE UTILITY WORK AFTER EACH DAY. UPON COMPLETION OF STORM DRAIN INLETS, IMMEDIATELY INSTALL INLET PROTECTION. CLEAN OUT SEDIMENT TRAPS UPON ACCUMULATION OF SEDIMENT TO ELEVATIONS INDICATED. (4 WEEKS)
9. BEGIN BUILDING CONSTRUCTION. UTILIZE SUMP PIT OR PORTABLE SEDIMENT TANK AS NECESSARY TO DEWATER BUILDING SITE. DIRECT DISCHARGE FROM DEWATERING OPERATIONS TO BASIN A, OUTSIDE OF LIMIT OF DISTURBANCE. (12 WEEKS)
10. UPON COMPLETION OF UTILITIES IN THE VICINITY OF RETAINING WALLS #2 AND #3, CONSTRUCT RETAINING WALLS #2 AND #3. (4 WEEKS)
11. COMPLETE UTILITY, BUILDING AND REMAINING SITE CONSTRUCTION. (6 WEEKS)
12. STABILIZE SITE WITH PAVING AND PERMANENT STABILIZATION. (3 WEEKS)
13. UPON APPROVAL OF SEDIMENT CONTROL INSPECTOR, REMOVE REMAINING SEDIMENT CONTROL DEVICES. (1 WEEK)

NOTE: DURING CONSTRUCTION, CONTRACTOR SHALL REMOVE ANY AND ALL ACCUMULATED SEDIMENT FROM RECEIVING BASINS, PONDS AND OTHER FACILITIES DOWNSTREAM OF THE LIMIT OF DISTURBANCE OF THESE PLANS.

SEDIMENT AND EROSION CONTROL LEGEND

	STABILIZED CONSTRUCTION ENTRANCE
— SF —	SILT FENCE
— SSF —	SUPER SILT FENCE
A-2 B-3	EARTH DIKE
A-2 B-3	TEMPORARY SWALE
---	LIMIT OF DISTURBANCE
	STANDARD INLET PROTECTION
	AT GRADE INLET PROTECTION
	CURB INLET PROTECTION
	PORTABLE SEDIMENT TANK
	ROCK OUTLET PROTECTION
	EROSION CONTROL MATTING



ENGINEER'S CERTIFICATE
 *I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.
Anthony U. Olsen 3/20/05
 SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE)

DEVELOPER'S CERTIFICATE
 *I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.
James C. Fessenden 3/30/05
 SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE)

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
[Signature] 4/20/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 4/20/05
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 4/20/05
 DIRECTOR DATE

THESE PLANS HAVE BEEN REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION: SOIL EROSION AND SEDIMENT CONTROL.
[Signature] 4/14/05
 USDA Natural Resources Conservation Service DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
[Signature] 4/14/05
 HOWARD SOIL CONSERVATION DISTRICT DATE

ADD RETAINING WALL SHEETS	10/25/05
C BID SET	3/24/05

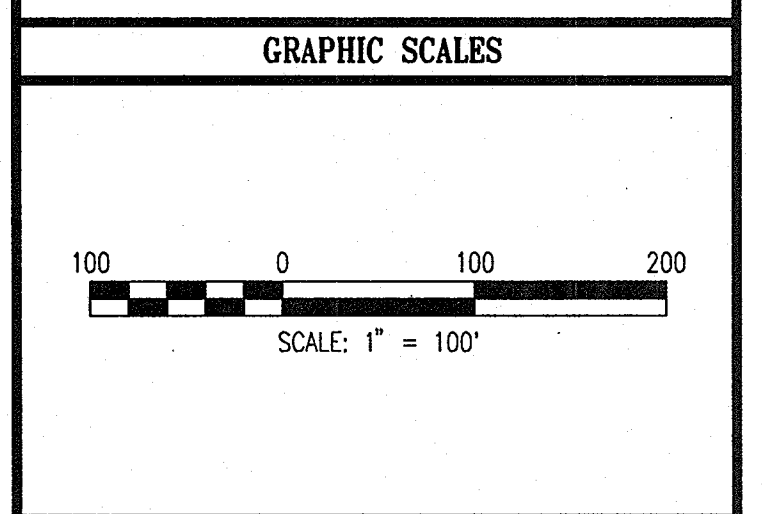
THE JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
 JOHNS HOPKINS ROAD
 LAUREL MARYLAND 20723-6099



SYSTEMS INTEGRATION BUILDINGS AND VAN PAD

SDP SET

JHU/APL INTERNAL USE
 THIS DATA SHALL NOT BE DISCLOSED TO A THIRD PARTY AND SHALL NOT BE DUPLICATED, USED, OR DISCLOSED IN WHOLE OR IN PART FOR ANY PURPOSE OTHER THAN TO EVALUATE THIS REP OR, IN THE CASE OF A CONTRACT AWARD, TO PERFORM THE WORK REQUIRED HEREUNDER, WITHOUT THE EXPRESS WRITTEN CONSENT OF JHU/APL.



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 WHITMAN, REQUARDT AND ASSOCIATES, LLP
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 BALTIMORE, MARYLAND 21231
 410 - 235 - 3450

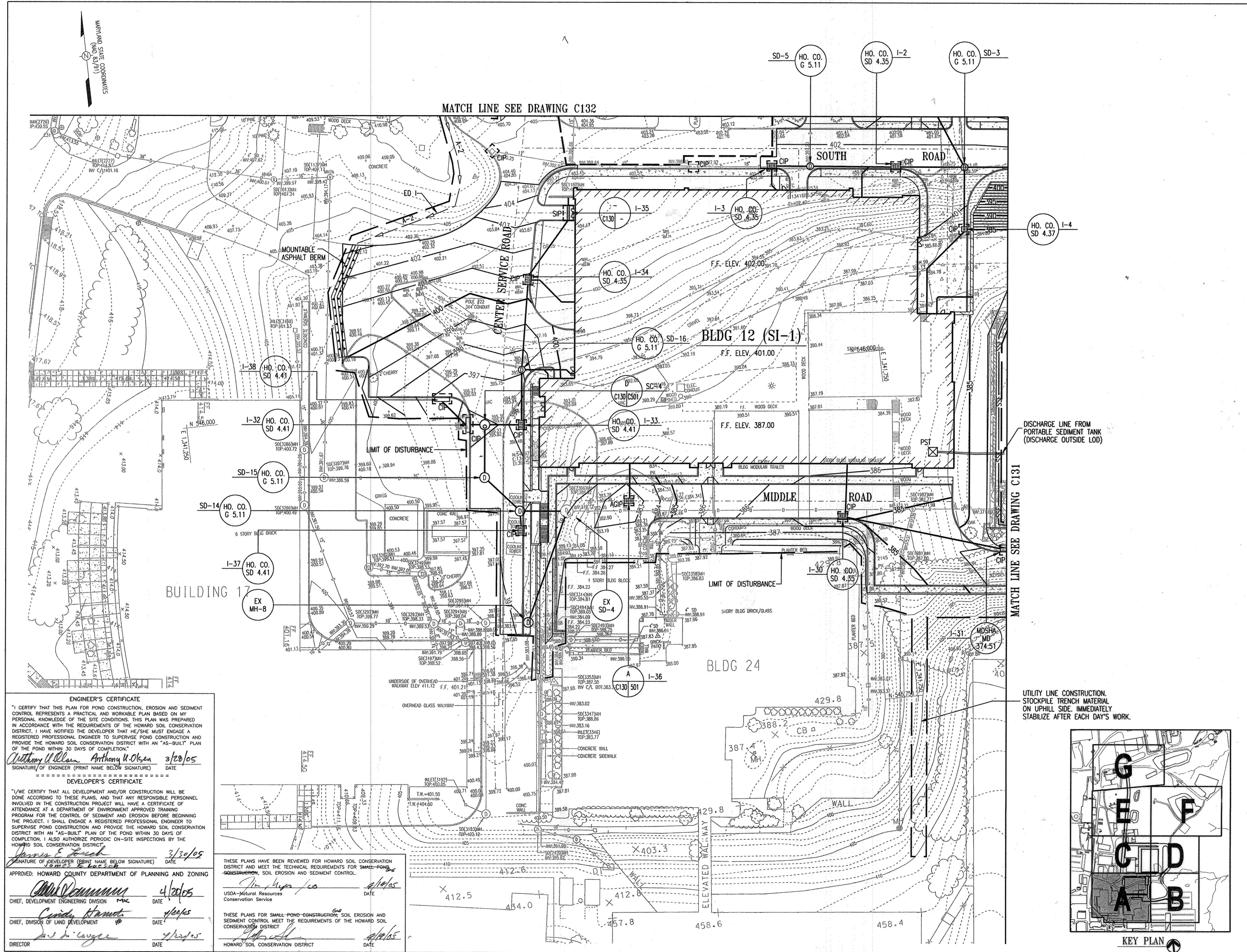
EROSION AND SEDIMENT CONTROL OVERVIEW

DRAWING NO. **C129**

Sheet 31 of 77

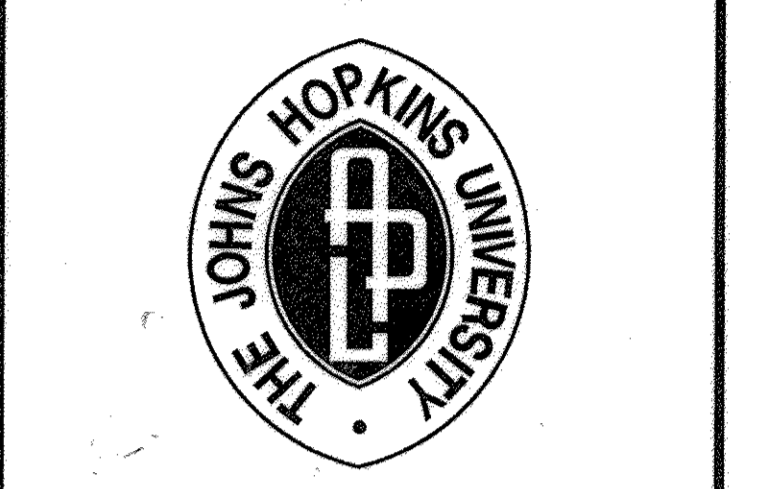
Scale: 1"=100'

Designed By: R.B.C. Drawn By: C.J.K.
 Checked By: A.U.O. Date: 03/25/05



ADD RETAINING WALL SHEETS	10/25/05
G BID SET	3/21/05

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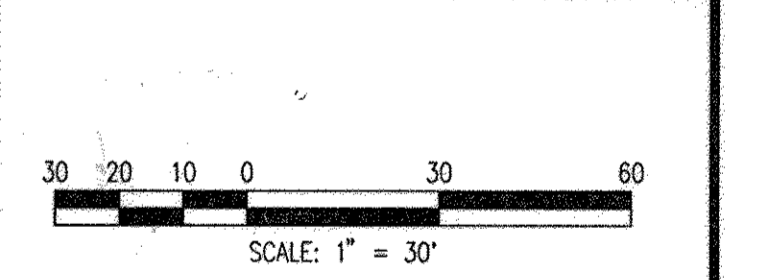


SYSTEMS INTEGRATION BUILDINGS AND VAN PAD

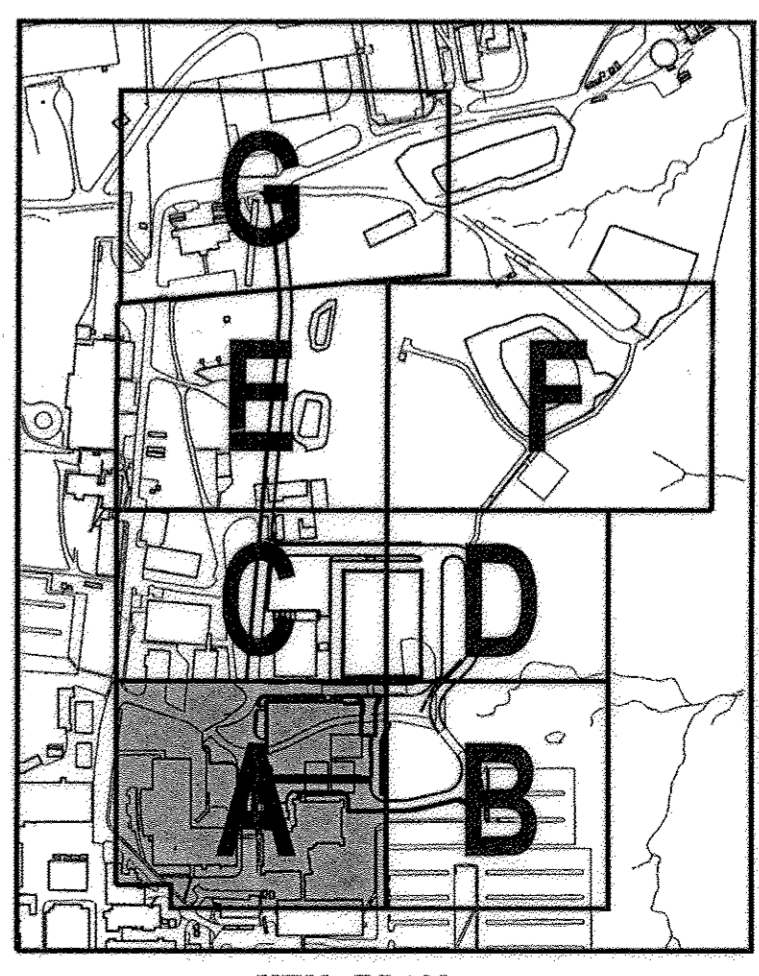
SDP SET

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GRAPHIC SCALES



KEY PLAN



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 801 S. CAROLINE STREET
 BALTIMORE, MARYLAND 21231
 410 - 235 - 3450

EROSION AND SEDIMENT CONTROL PLAN 'A'

DRAWING NO.	C130
Sheet 32 of 77	
Scale:	1"=30'
Designed By:	R.B.C.
Drawn By:	C.J.K.
Checked By:	A.U.O.
Date:	03/25/05

ENGINEER'S CERTIFICATE
 I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

Anthony W. Olsen *Anthony W. Olsen* 3/28/05
 SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE) DATE

DEVELOPER'S CERTIFICATE
 I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

James E. French 3/28/05
 SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE) DATE

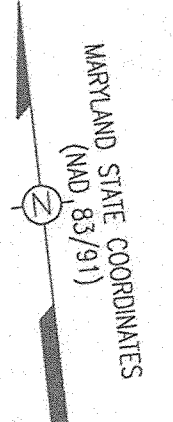
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Mark Cummings 4/28/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE
Cindy Hammett 4/28/05
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE
David L. Taylor 4/28/05
 DIRECTOR DATE

THESE PLANS HAVE BEEN REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

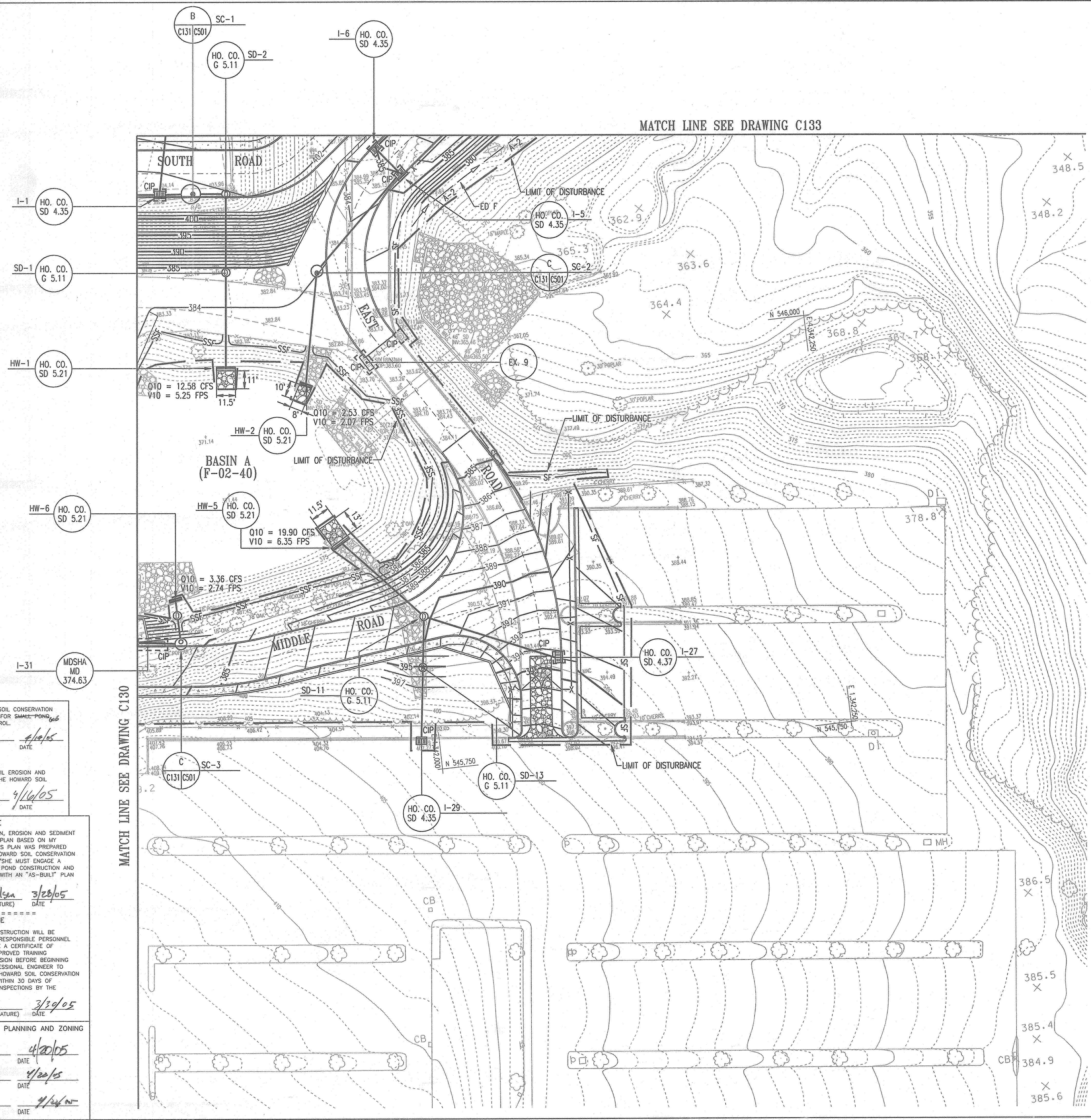
Jim Hagan 4/14/05
 USDA-Natural Resources Conservation Service DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

John A. ... 4/14/05
 HOWARD SOIL CONSERVATION DISTRICT DATE



MATCH LINE SEE DRAWING C133

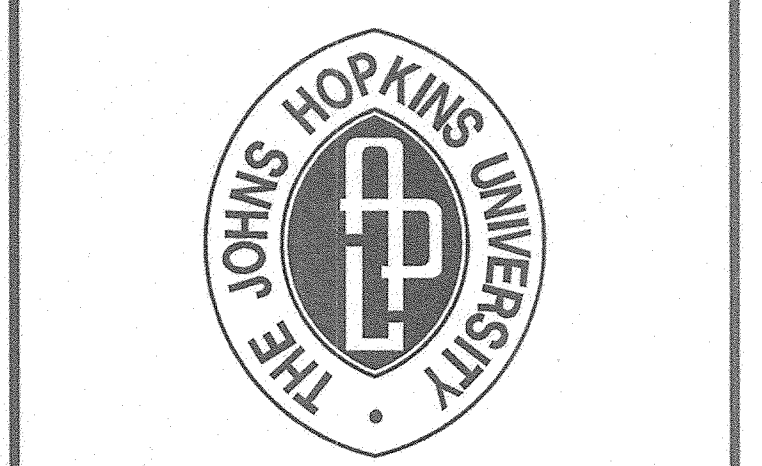


EXISTING BASIN A DESIGN SUMMARY

SEE F-02-40			
Hazard Class 'A' Drainage Area :	43.2 Acres		
DESIGN STORM	WATER SURFACE ELEVATION (feet)	STORAGE VOLUME (acre feet)	Qout (cfs)
Bottom	371.38	0.00	n/a
2-year	376.68	61.47	61.47
10-year	378.58	127.33	127.33
100-year	379.71	225.61	225.61

ADD RETAINING WALL SHEETS	10/25/05
G BID SET	3/24/05

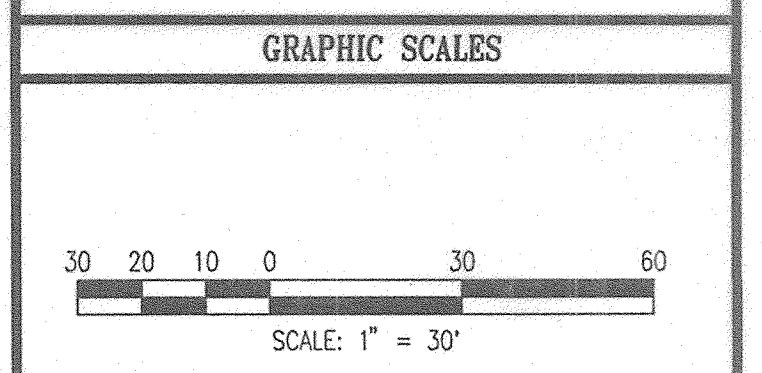
THE JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
 JOHNS HOPKINS ROAD
 LAUREL MARYLAND 20723-6099



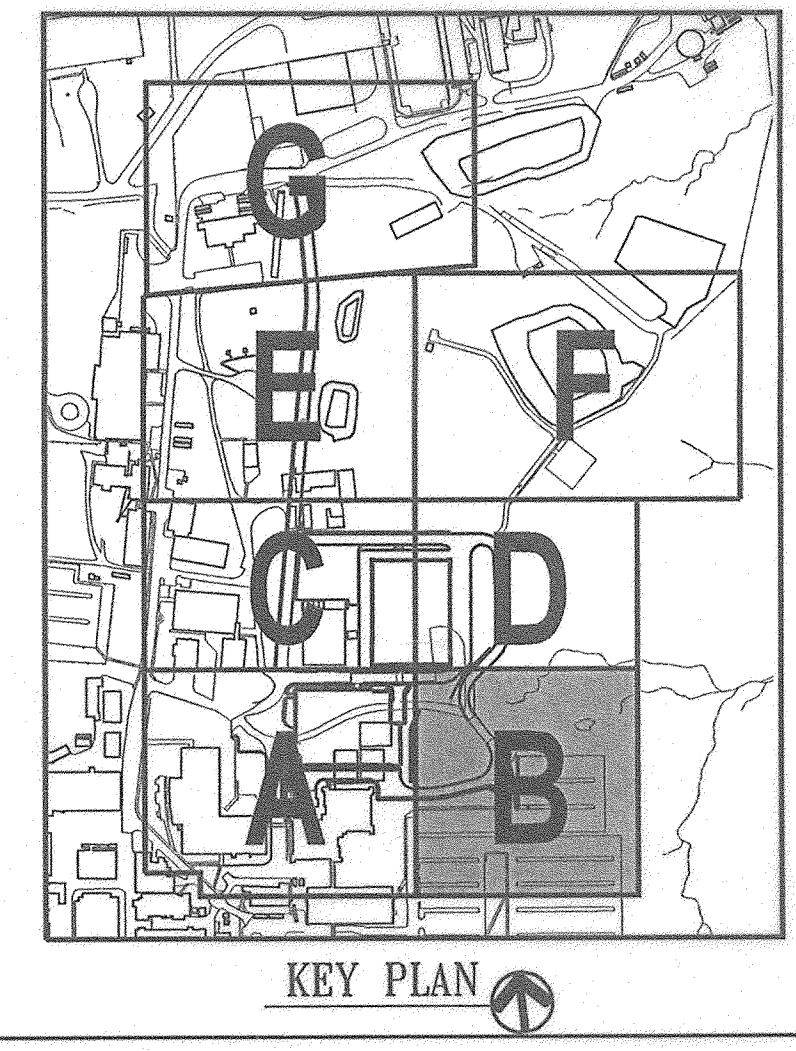
SYSTEMS INTEGRATION BUILDINGS AND VAN PAD

SDP SET

JHU/APL INTERNAL USE
 THIS DATA SHALL NOT BE DISCLOSED TO A THIRD PARTY AND SHALL NOT BE DUPLICATED, USED, OR DISCLOSED IN WHOLE OR IN PART FOR ANY PURPOSE OTHER THAN TO EVALUATE THIS RFP OR, IN THE CASE OF A CONTRACT AWARD, TO PERFORM THE WORK REQUIRED HEREUNDER, WITHOUT THE EXPRESS WRITTEN CONSENT OF JHU/APL.



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 410 - 235 - 3450



EROSION AND SEDIMENT CONTROL PLAN 'B'

DRAWING NO. **C131**

Sheet 33 of 44

Scale: 1"=30'

Designed By: R.B.C. Drawn By: C.J.K.

Checked By: A.U.O. Date: 03/25/05

THESE PLANS HAVE BEEN REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

Janey Jones 4/16/05
 USDA Natural Resources Conservation Service DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

Anthony W. Schmitz 4/16/05
 HOWARD SOIL CONSERVATION DISTRICT DATE

ENGINEER'S CERTIFICATE
 "I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."

Anthony U. Olsen 3/23/05
 SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE) DATE

DEVELOPER'S CERTIFICATE
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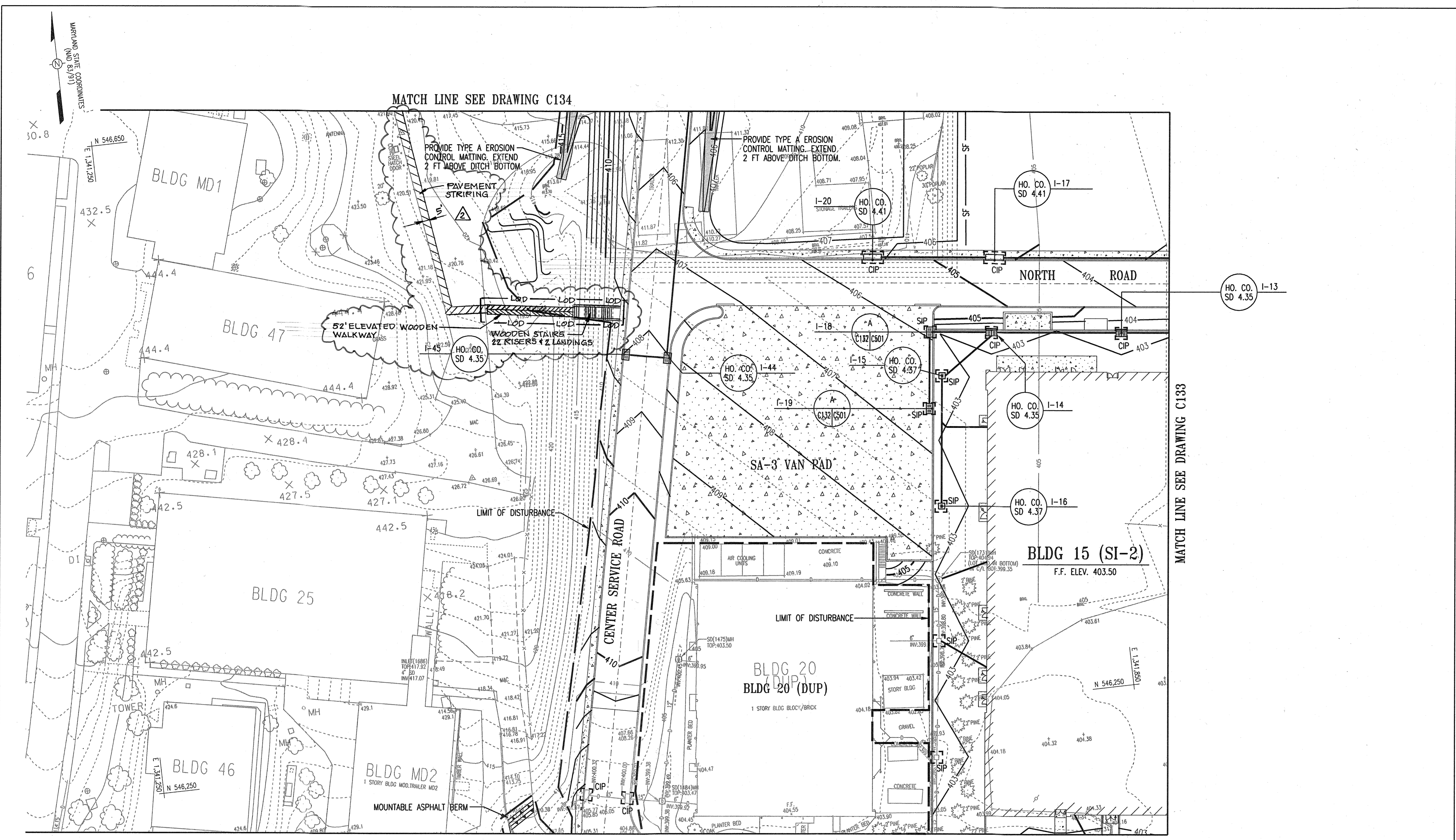
James E. French 3/29/05
 SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE) DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Mark Dammann 4/20/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Cathy Karstner 4/20/05
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Asa A. Gougeon 4/24/05
 DIRECTOR DATE



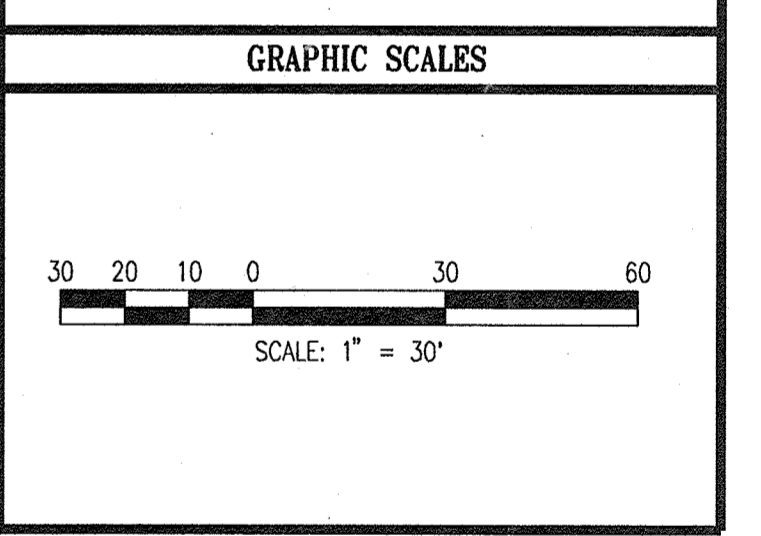
ADDED WALKWAY + STAIRS	7/27/10
ADD RETAINING WALL SHEETS	10/25/05
G BID SET	3/24/05

THE JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
 JOHNS HOPKINS ROAD
 LAUREL MARYLAND 20723-6099

SYSTEMS INTEGRATION BUILDINGS AND VAN PAD

SDP SET

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 BALTIMORE, MARYLAND 21231
 410 - 235 - 3450

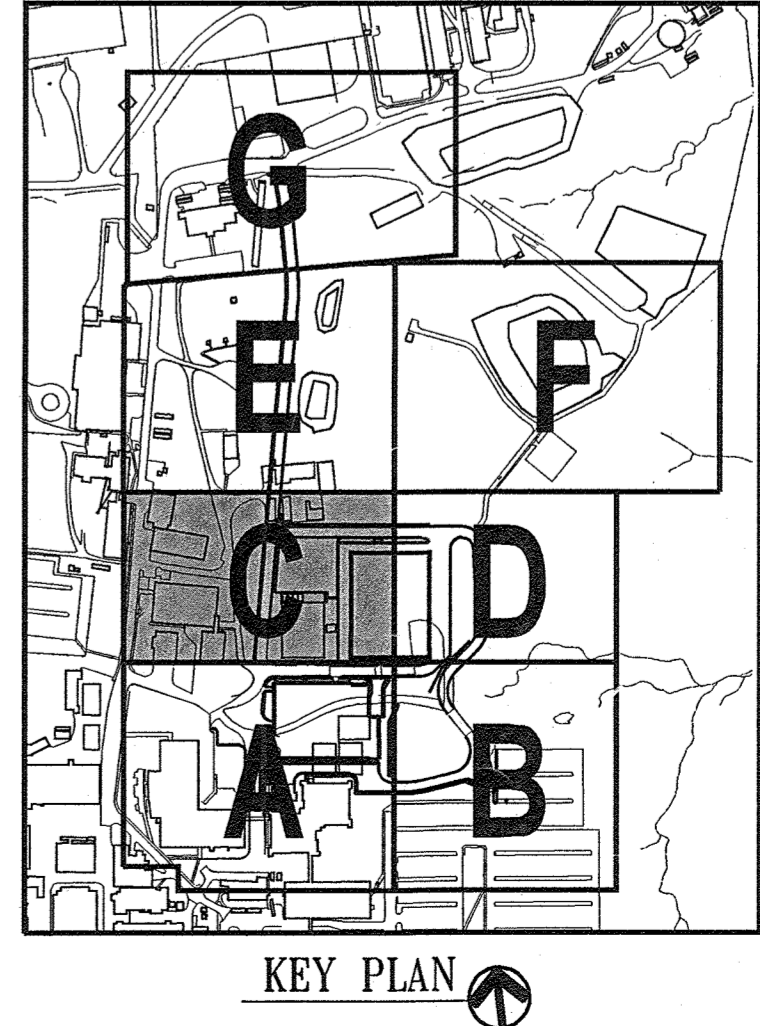
EROSION AND SEDIMENT CONTROL PLAN 'C'

DRAWING NO. **C132**

Sheet 34 of 77

Scale: 1" = 30'

Designed By: R.B.C. Drawn By: C.J.K.
 Checked By: A.U.O. Date: 03/25/05



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 4/20/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE

[Signature] 4/22/05
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 4/22/05
 DIRECTOR DATE

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Anthony U. Olsen 3/29/05
 SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE) DATE

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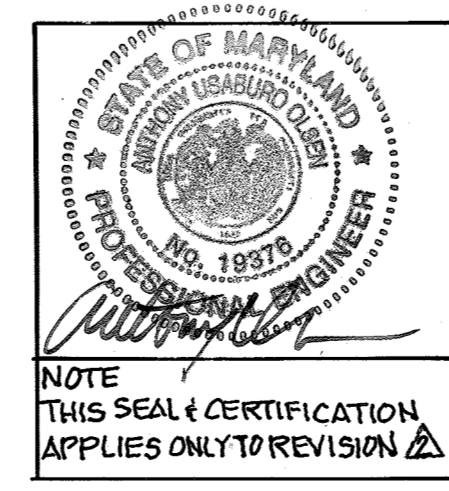
James E. Zoesch 3/29/05
 SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE) DATE

THESE PLANS HAVE BEEN REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL-POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

[Signature] 4/16/05
 USDA-Natural Resources Conservation Service DATE

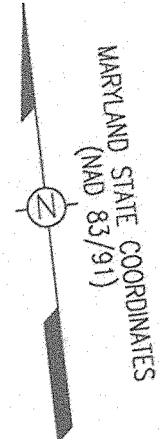
THESE PLANS FOR SMALL-POND-CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT

[Signature] 4/16/05
 HOWARD SOIL CONSERVATION DISTRICT DATE

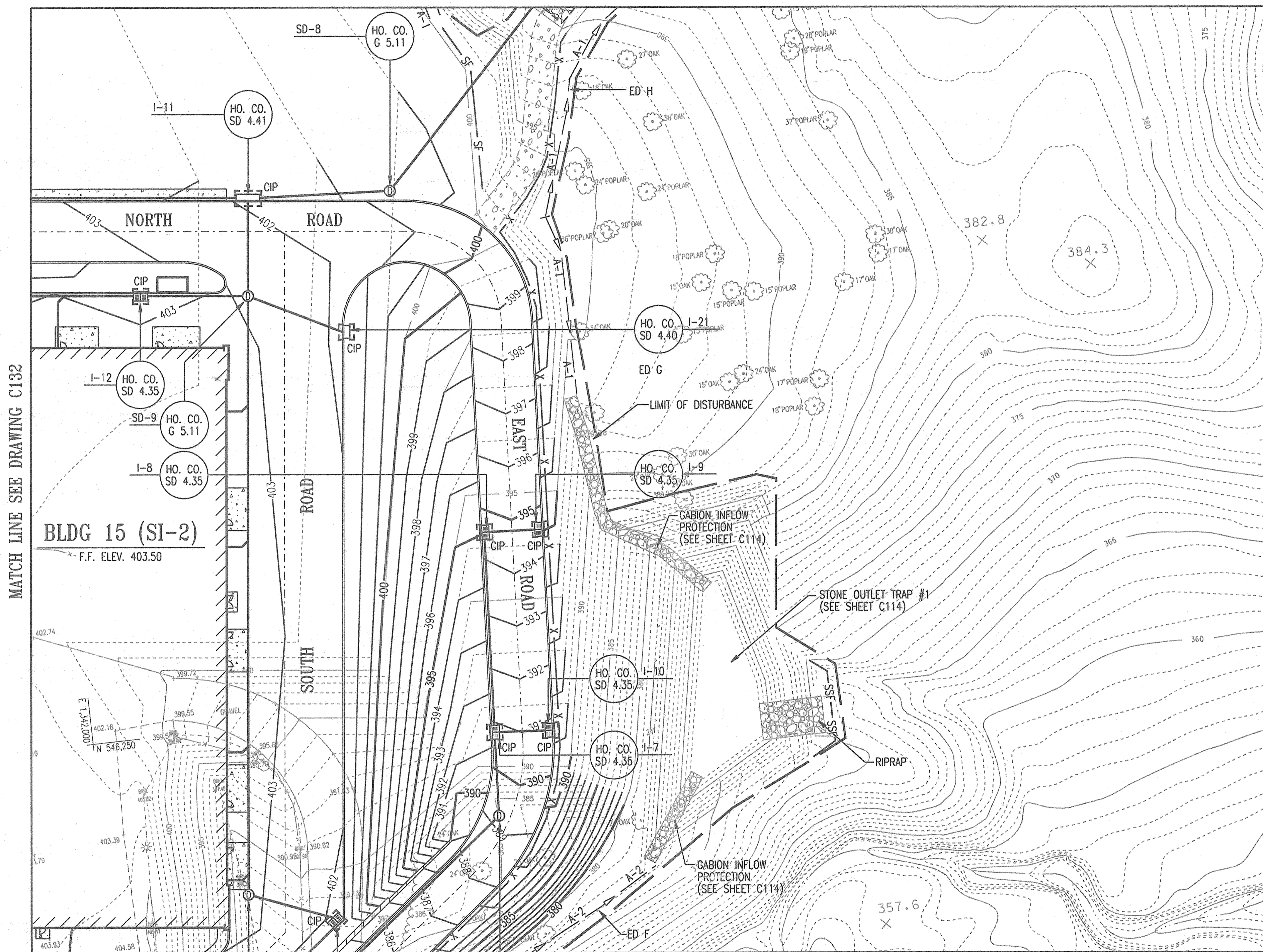


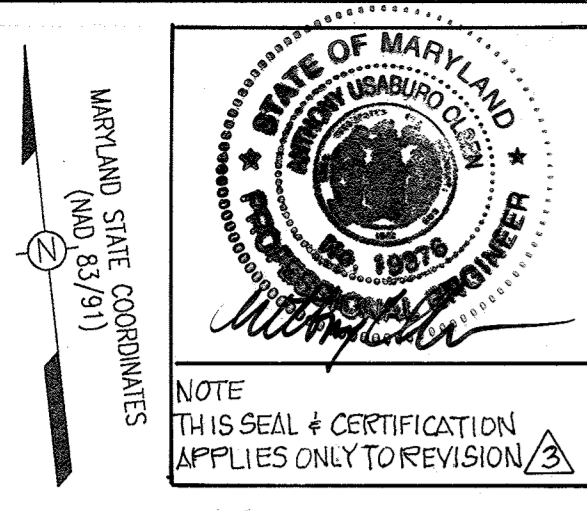
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE NUMBER 19376 EXPIRATION DATE SEPTEMBER 22, 2021.

NOTE THIS SEAL & CERTIFICATION APPLIES ONLY TO REVISION



MATCH LINE SEE DRAWING C135





I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NUMBER 19376, EXPIRATION DATE SEPTEMBER 22, 2021.

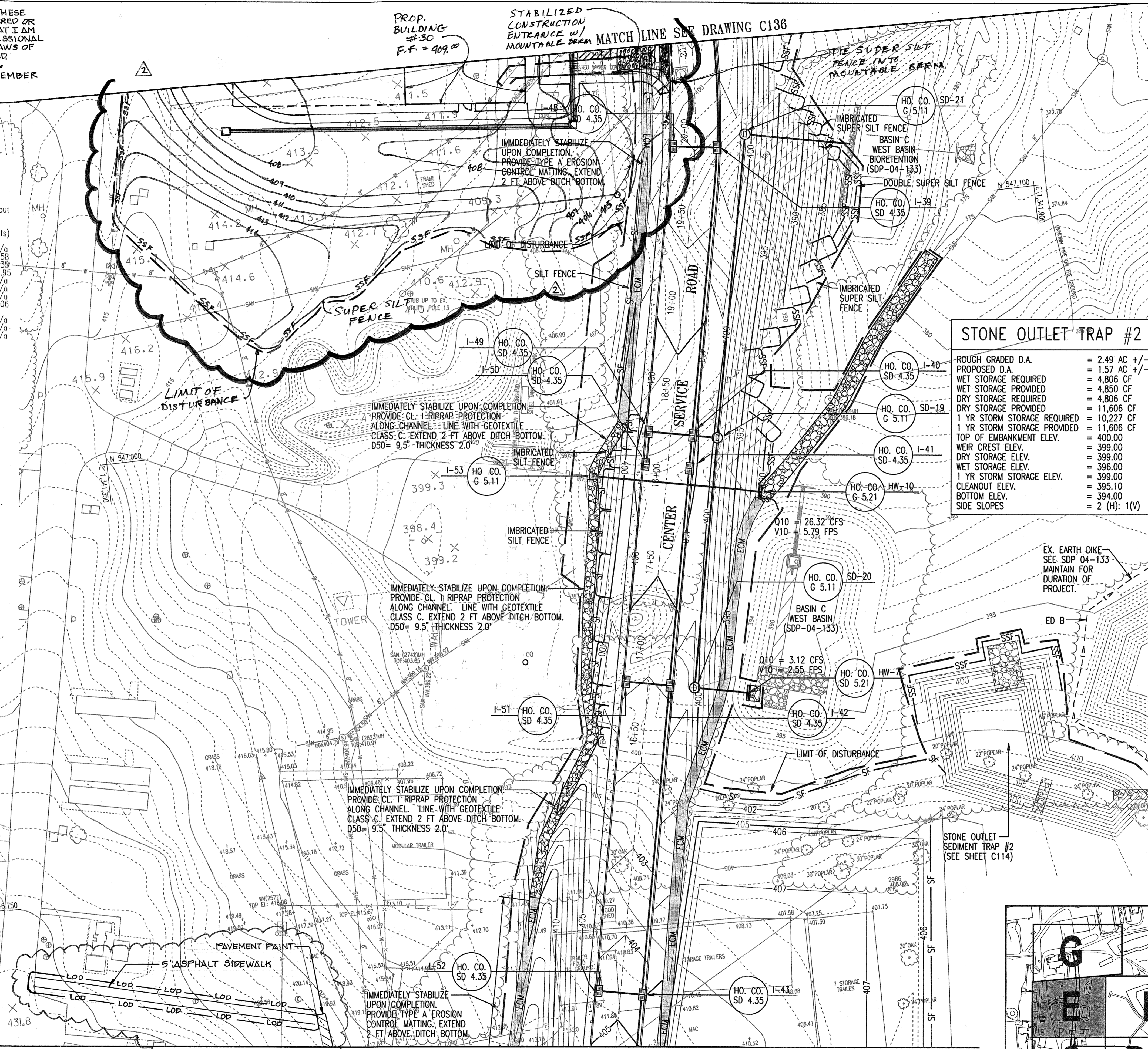
WEST BASIN DESIGN SUMMARY

DESIGN STORM	WATER SURFACE ELEVATION (feet)	STORAGE VOLUME (acre feet)	Q _{in} (cfs)	Q _{out} (cfs)
Invert of Basin	390.00	0.0000	n/a	n/a
2-year	391.64	0.1055	3.62	0.58
10-year	391.90	0.1274	8.50	9.39
100-year	392.02	0.1380	14.39	13.93
Forebay Sediment Volume	392.60	0.0162	n/a	n/a
Recharge Volume (Rev)	n/a	0.0082	n/a	n/a
Water Quality Volume (WQv)	n/a	0.0830	n/a	n/a
Channel Protection Volume (Cpv)	391.52	0.1000	2.28	0.06
Overbank Flood Protection (Op)	n/a	n/a	n/a	n/a
Extreme Flood Protection (Of)	n/a	n/a	n/a	n/a
Top of Dam Elevation	394.10	0.3610	n/a	n/a

Note: Op and Of are not required for this project as determined by HCDRS.
 Riser: Reinforced Concrete Box, 24 inch RCP
 Principal Spillway: None, Principal spillway only.
 Emergency Spillway: Private, Responsibility of the Owner
 Maintenance: (JHU APL)

WEST BASIN TRAP DATA

SDP-04-133	
Basin Number:	3 (West)
Basin Type:	Basin
Existing Drainage Area (ac.):	0
Proposed Drainage Area (ac.):	0.97
Storage Required (wet & dry) (cu.ft.):	3492
Storage Provided (wet & dry) (cu.ft.):	3492
Weir Length or Riser/Barrel Size:	5'x5' / 24 in.
Embankment elev.:	394.1
Weir Crest Elev.:	391.63
Outlet elev. (=wet elev., =bottom of perforated POST):	389.41
Outlet Distance Below Riser Crest (feet):	2.22
Cleanout elev.:	389.14
Cleanout Distance Below Riser Crest (feet):	2.49
Bottom elev.:	388.7
Bottom Dimensions:	35'x84'
Q ₂ Exist. / Q ₂ Prop.:	2.09/3.44
Q ₂ Exist. / Q ₂ Temp.:	2.09/2.87
Drawdown Device Type:	Vertical
Drawdown Device Internal Orifice Size (in.):	1.5
Drawdown Device Internal Orifice Invert:	389.41



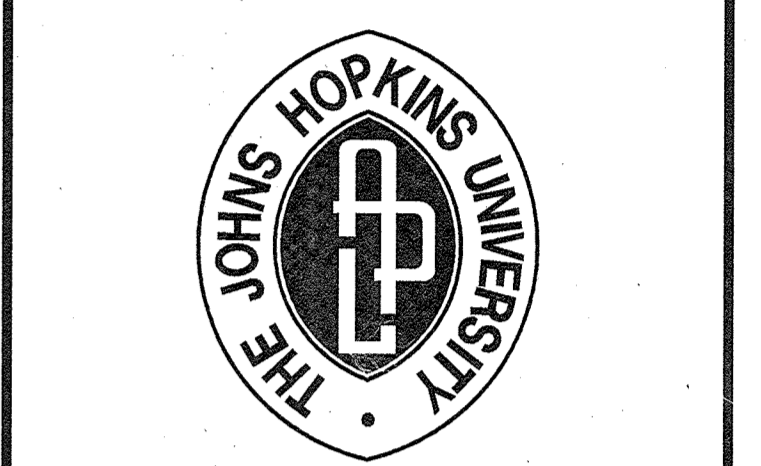
STONE OUTLET TRAP #2

ROUGH GRADED D.A.	= 2.49 AC +/-
PROPOSED D.A.	= 1.57 AC +/-
WET STORAGE REQUIRED	= 4,806 CF
WET STORAGE PROVIDED	= 4,850 CF
DRY STORAGE REQUIRED	= 4,806 CF
DRY STORAGE PROVIDED	= 11,606 CF
1 YR STORM STORAGE REQUIRED	= 10,227 CF
1 YR STORM STORAGE PROVIDED	= 11,606 CF
TOP OF EMBANKMENT ELEV.	= 400.00
WEIR CREST ELEV.	= 399.00
DRY STORAGE ELEV.	= 396.00
WET STORAGE ELEV.	= 399.00
1 YR STORM STORAGE ELEV.	= 395.10
CLEANOUT ELEV.	= 394.00
BOTTOM ELEV.	= 394.00
SIDE SLOPES	= 2 (H): 1(V)

MATCH LINE SEE DRAWING C135

ADDED WALKWAY & STAIRS	9/27/19
BUILDING #30	12/14/09
ADD RETAINING WALL SHEETS	10/25/05
RD SET	3/24/05

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APPLIED PHYSICS LABORATORY
 JOHNS HOPKINS ROAD
 LAUREL MARYLAND 20723-6099

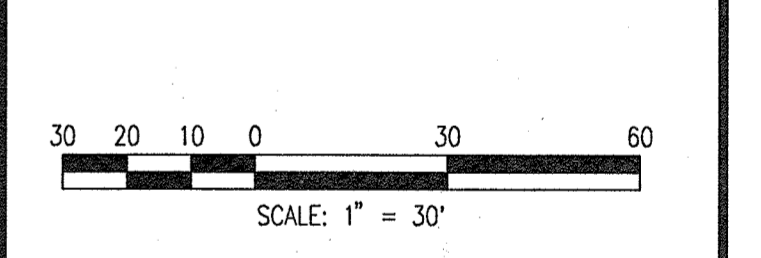


SYSTEMS INTEGRATION BUILDINGS AND VAN PAD

SDP SET

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GRAPHIC SCALES



SCALE: 1" = 30'



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 801 S. CAROLINE STREET
 BALTIMORE, MARYLAND 21231
 410 - 235 - 3450

EROSION AND SEDIMENT CONTROL PLAN 'E'

DRAWING NO.	C134
Sheet 36 of 77	
Scale:	1" = 30'
Designed By:	R.B.C.
Drawn By:	C.J.K.
Checked By:	A.U.O.
Date:	03/25/05



KEY PLAN



FOR REVISION ONLY

* REFER TO SITE PLAN C120 & C121 FOR ADDITIONAL SPOT ELEVATIONS

ENGINEER'S CERTIFICATE
 I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

Anthony U. Olson, Anthony U. Olson, 3/20/05
 SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE) DATE

DEVELOPER'S CERTIFICATE
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Signature of Developer (Print Name Below Signature) DATE
 Approved: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

THESE PLANS HAVE BEEN REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL-POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

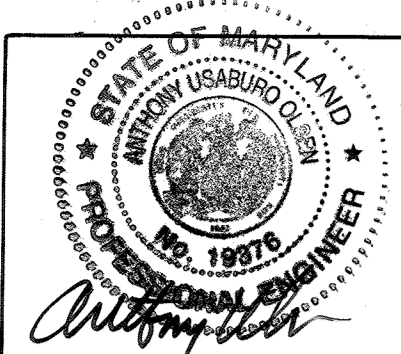
USDA-Natural Resources Conservation Service
 DATE: 4/18/05

THESE PLANS FOR SMALL-POND CONSTRUCTION SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT
 DATE: 4/18/05

LOD FOR REVISION 3 = 3045 SF

MATCH LINE SEE DRAWING C132



TO STORM CEPTOR #1 (SDP-04-76) & BASIN B F-02-77

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE NUMBER 19376 EXPIRATION DATE SEPTEMBER 22, 2021.

NOTE THIS SEAL & CERTIFICATION APPLIES ONLY TO REVISION

FOR STORM DRAIN & STORMWATER MANAGEMENT REFER TO SDP-04-66 AND SDP-04-76 AS WELL AS F-02-77

WATER QUALITY MANAGEMENT PROVIDED BY STORMCEPTOR #1 REFER TO SDP-04-76 WATER QUALITY MANAGEMENT PROVIDED BY BASIN B F-02-77

NOTE: ALL TIMES OF CONCENTRATION ARE 5 MINUTES UNLESS OTHERWISE NOTED.

DRAINAGE AREAS

MARYLAND STATE COORDINATES
NAD 83-71

STRUCTURE	AREA ID	AREA (ac)	C RUNOFF COEF.	% IMPER
I-9	I	0.14	0.83	97%
I-11	R2	0.23	0.61	67%
I-12	H	0.06	0.66	74%
I-13	G	0.05	0.85	100%
I-14	F	0.03	0.85	100%
I-17	Q2	0.32	0.69	78%
I-18	B	0.09	0.85	100%
I-20	A	0.36	0.63	71%
I-21	K	0.18	0.85	100%
I-39	E3	0.08	0.57	62%
I-40	D3	0.09	0.57	62%
I-41	C3	0.08	0.56	61%
I-42	B3	0.10	0.58	63%
I-43	A3	0.08	0.66	74%
I-44	H2	0.05	0.85	100%
I-45	C2	0.28	0.29	19%
I-46	F3	0.06	0.57	62%
I-47	G3	0.06	0.57	62%
I-48	H3	0.08	0.56	61%
I-49	I3	0.09	0.56	61%
I-50	J3	0.08	0.57	62%
I-51	K3	0.16	0.44	45%
I-52	L3	0.21	0.37	35%
I-53	M3	5.07	0.74	85%
I-8	AA	0.51	0.22	8%
I-7	BB	0.14	0.16	0%
I-4	DD	0.08	0.86	100%

SOIL TYPES

MAP SYMBOL	NAME	HYDROLOGIC SOIL GROUP
B0	BAILE	D
C1B	GLENELG	B
M1C2	MANOR	B
M1D2	MANOR	B
M0C2	MANOR	B

STRUCTURE	AREA ID	AREA (ac)	C RUNOFF COEF.	% IMPER
ROOF LDR TO M-6	CC	0.38	0.86	100%
EX. I-1	EE	0.52	0.64	69%
ROOF LDR TO M-3	FF	0.18	0.86	100%
EX. I-2	GG	0.19	0.86	100%
EX. I-2	HH	0.18	0.86	100%

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CHIEF, DEVELOPMENT ENGINEERING DIVISION MK 4/20/05

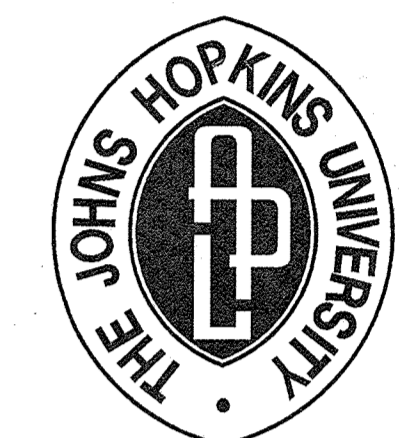
 CHIEF, DIVISION OF LAND DEVELOPMENT 4/20/05

 DIRECTOR JMS 4/22/05



ADDED WALKWAY & STAIRS	7/27/19
BUILDING 30	12/1/04
ADD RETAINING WALL SHEETS	10/25/05
G BID SET	3/24/05

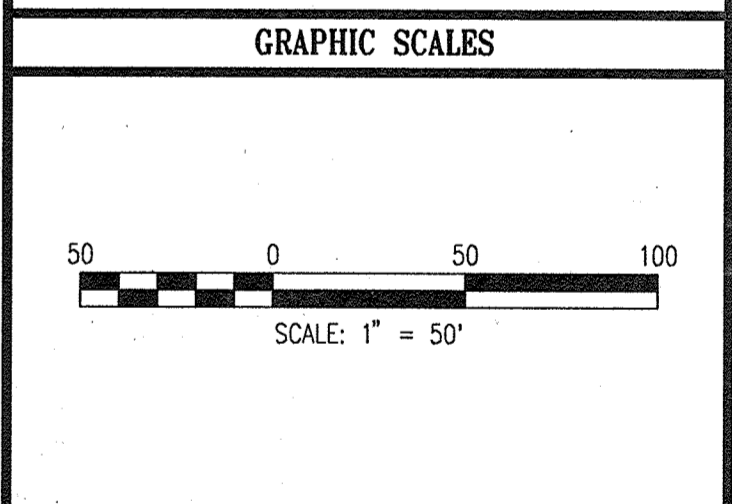
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SYSTEMS INTEGRATION
 BUILDINGS AND VAN PAD

SDP SET

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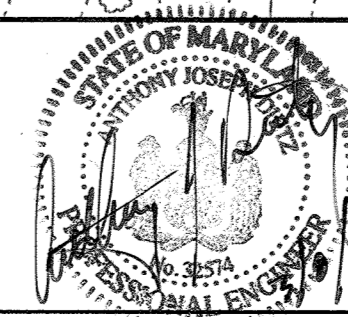
DRAINAGE AREA PLAN A

DRAWING NO. **C137**

Sheet 39 of 47

Scale: 1"=50'


Designed By: R.B.C. Drawn By: C.J.K.
 Checked By: A.U.O. Date: 03/25/05



FOR REVISION ONLY

ADD RETAINING WALL SHEETS	10/25/05
G BID SET	3/24/06

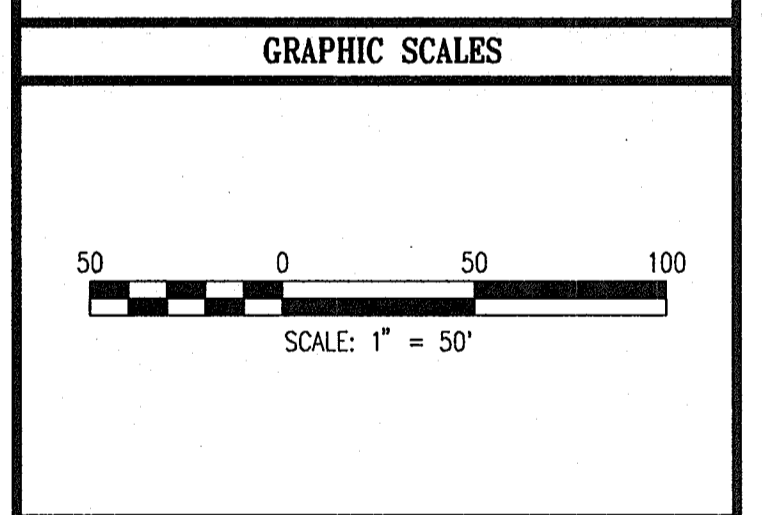
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DRAINAGE AREA PLAN B

DRAWING NO. **C138**

Sheet 40 of 77

Scale: 1" = 50'

Designed By: R.B.C. Drawn By: C.J.K.
 Checked By: A.U.O. Date: 03/25/05

SOIL TYPES

MAP SYMBOL	NAME	HYDROLOGIC SOIL GROUP
Ba	BAILE	D
G1B	GLENELG	B
M1C2	MANOR	B
M1D2	MANOR	B
MaC2	MANOR	B

NOTE: ALL TIMES OF CONCENTRATION ARE 5 MINUTES UNLESS OTHERWISE NOTED.

DRAINAGE AREAS

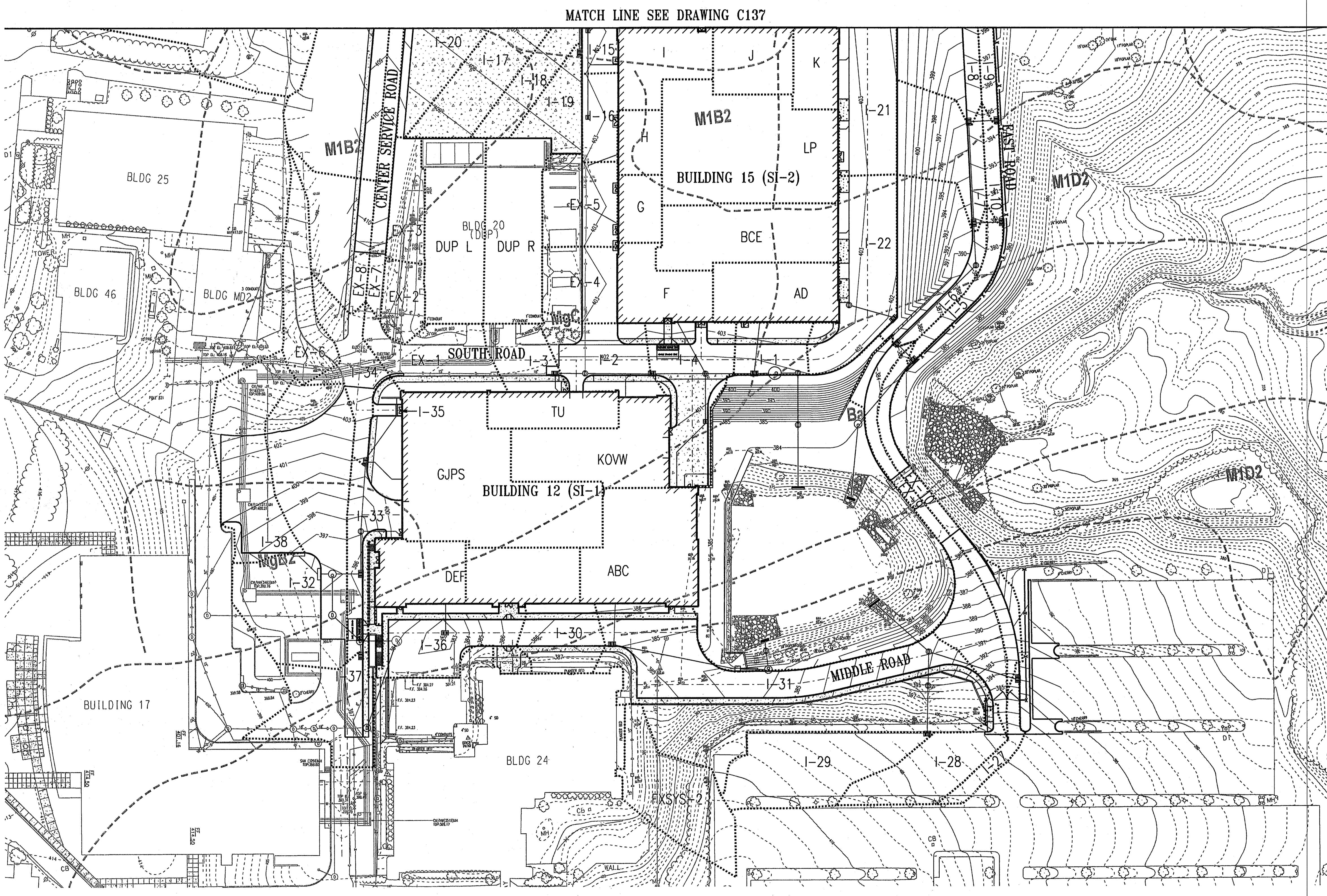
STRUCTURE	AREA ID	AREA (ac)	C RUNOFF COEF.	% IMPERVIOUS
EX-1	J2	0.15	0.63	71%
EX-2	N2	0.06	0.11	0%
EX-3	O2	0.08	0.11	0%
EX-4	M2	0.11	0.85	100%
EX-5	C	0.13	0.85	100%
EX-6	E2	0.12	0.54	58%
EX-7	I2	0.04	0.85	100%
EX-8	F2	0.15	0.33	28%
EX-9	T	0.19	0.79	90%
EX-10	U	0.11	0.74	86%
EX-11	P2	0.19	0.22	15%
I-1	Q	0.08	0.62	69%
I-2	L2	0.14	0.58	64%
I-3	K2	0.08	0.57	62%
I-4	R	0.19	0.72	83%
I-5	N	0.05	0.85	100%
I-6	O	0.22	0.25	19%
I-7	L	0.16	0.26	21%
I-8	J	0.22	0.41	40%
I-10	M	0.03	0.85	100%
I-15	E	0.04	0.85	100%
I-16	D	0.06	0.85	100%
I-19	V2	0.08	0.85	100%
I-22	P	0.22	0.83	98%
I-27	V	0.18	0.77	89%
I-29	W2	0.22	0.78	91%
I-30	Z2	0.10	0.54	59%
I-31	Z1	0.67	0.50	52%
I-32	B2	0.46	0.52	54%
I-33	B3	0.16	0.65	75%
I-34	D2	0.11	0.63	73%
I-35	D2	0.01	0.85	100%
I-36	A2	0.18	0.70	83%
I-37	S2	0.17	0.70	76%
I-38	C2	0.23	0.52	57%

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[Signature] 4/20/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

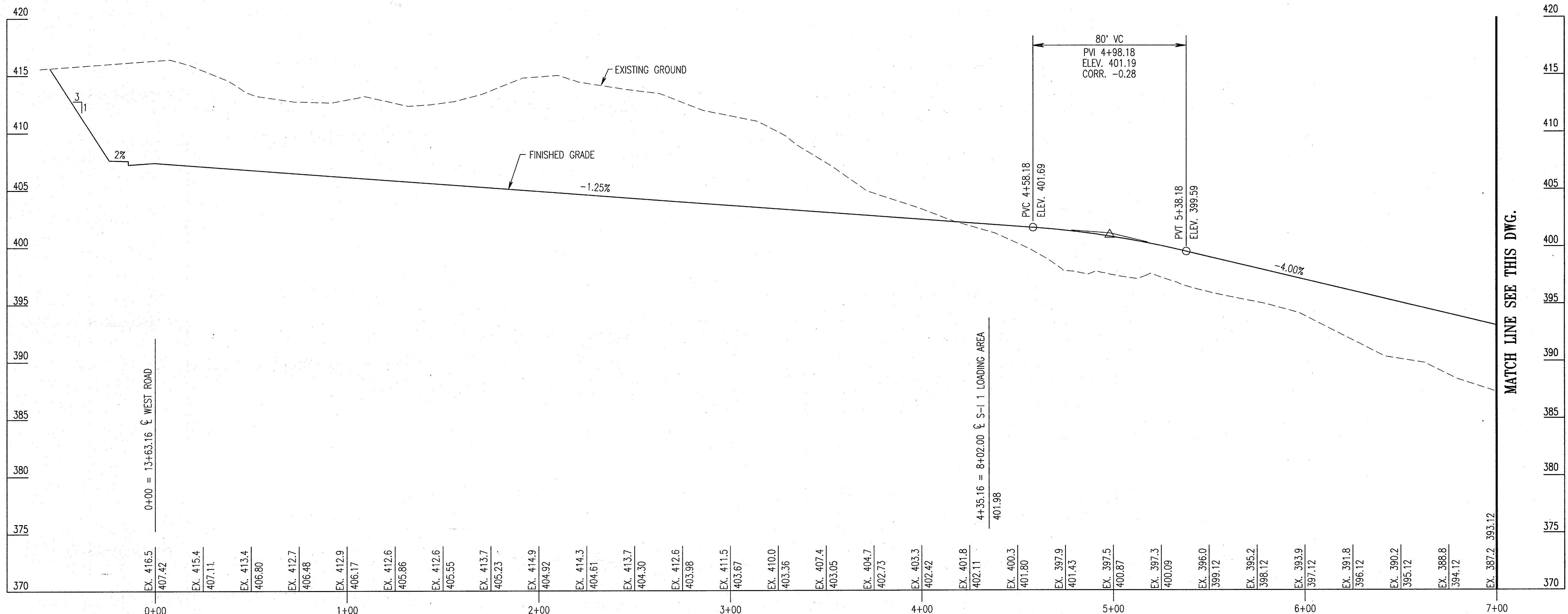
[Signature] 4/24/05
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 4/24/05
 DIRECTOR DATE



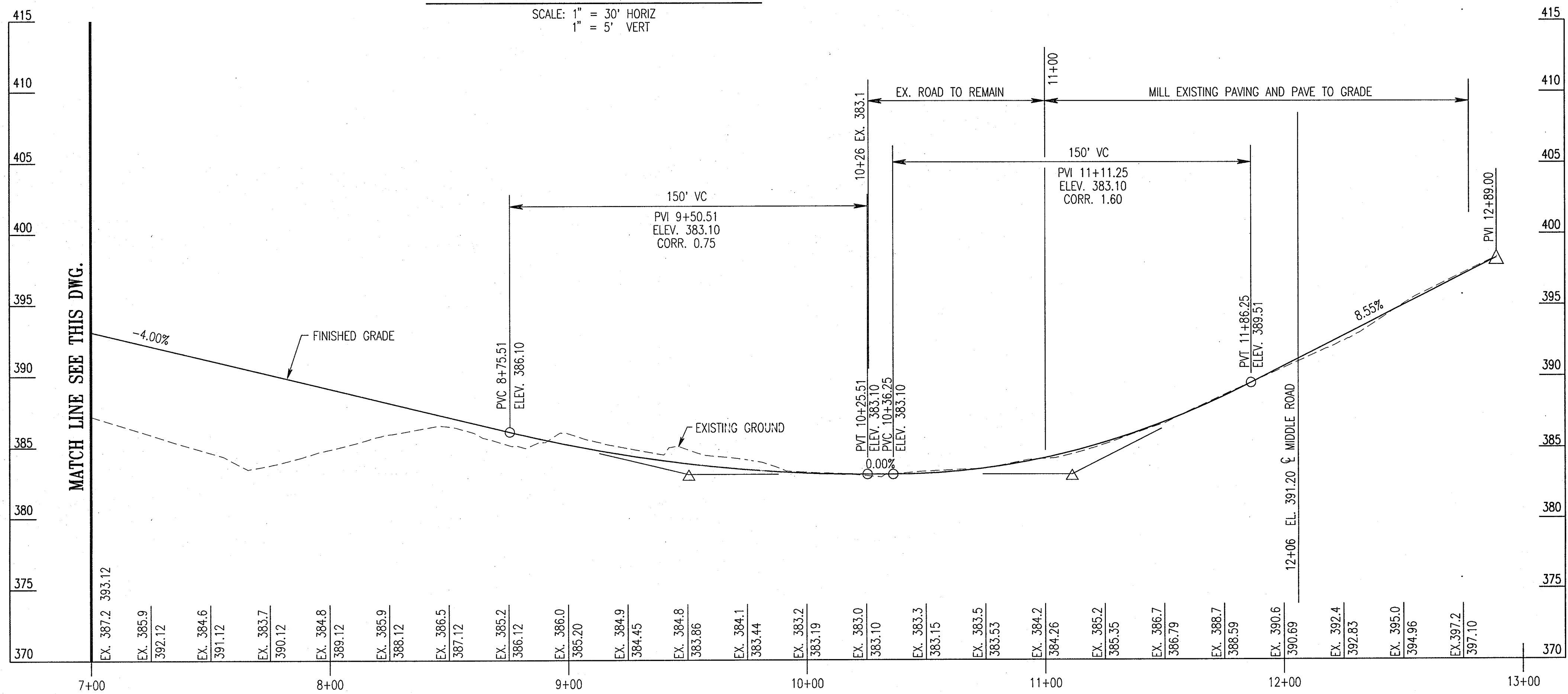
MARYLAND STATE COORDINATES
 (NAD 83) 58,917

MATCH LINE SEE DRAWING C137



NORTH AND EAST ROAD PROFILE

SCALE: 1" = 30' HORIZ
1" = 5' VERT



NORTH AND EAST ROAD PROFILE

SCALE: 1" = 30' HORIZ
1" = 5' VERT

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CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 4/20/05

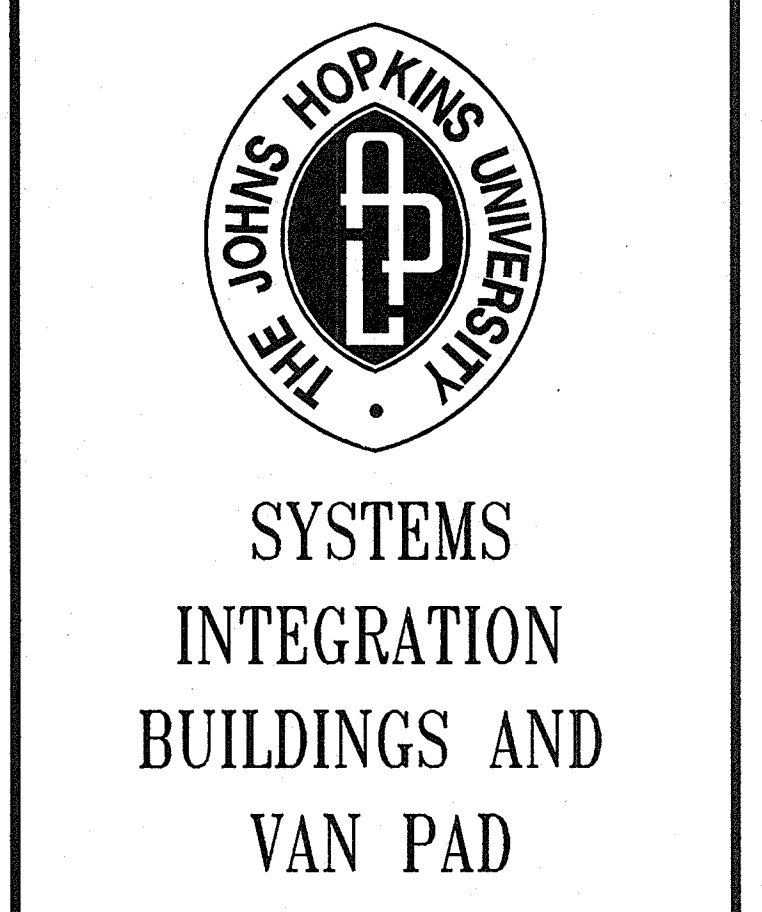
DIRECTOR
 DATE: 4/20/05

ADD RETAINING WALL SHEETS

G BID SET

3/24/05

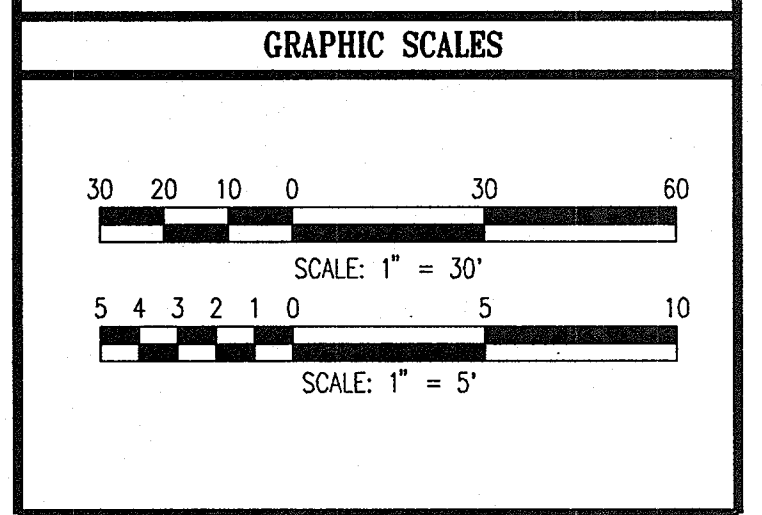
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ROAD PROFILES

DRAWING NO. **C201**

Sheet 41 of 77

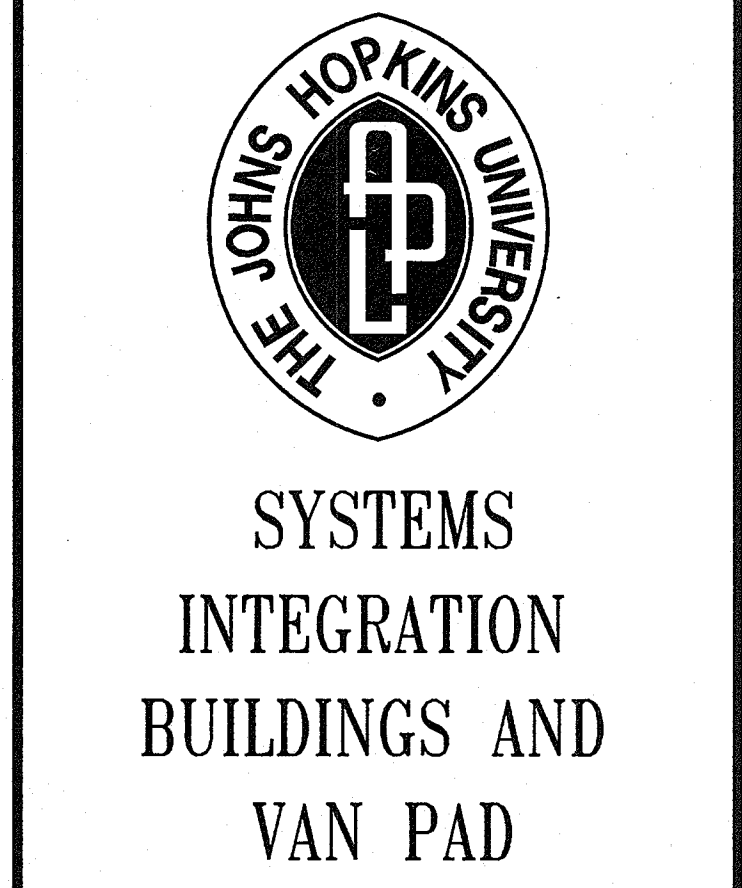
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Checked By: A.U.O. Date: 03/25/05

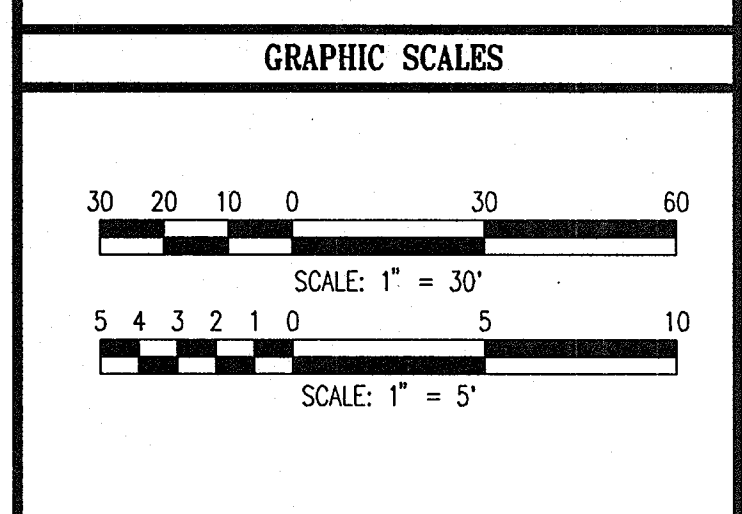
ADD RETAINING WALL SHEETS	10/25/05
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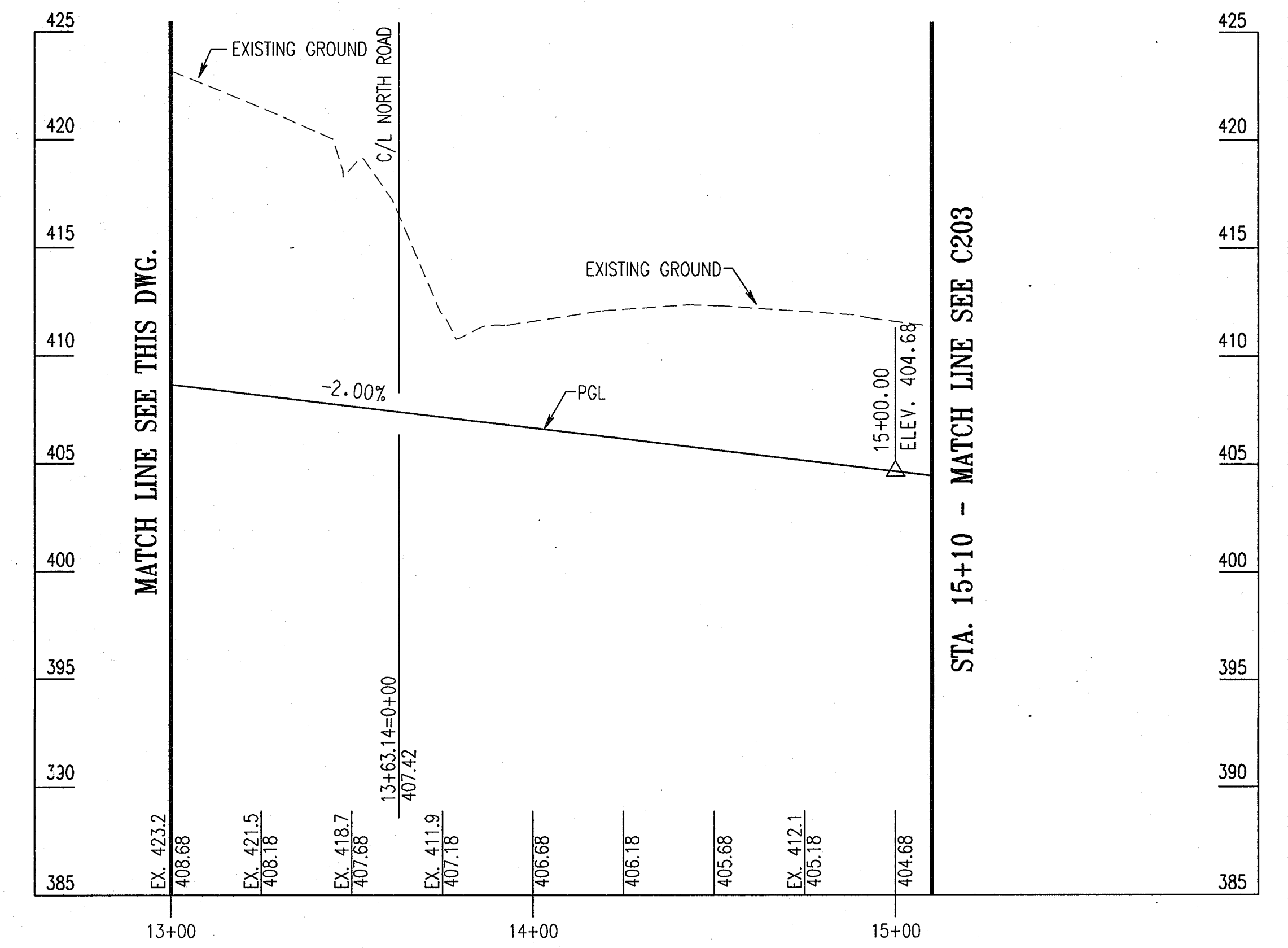
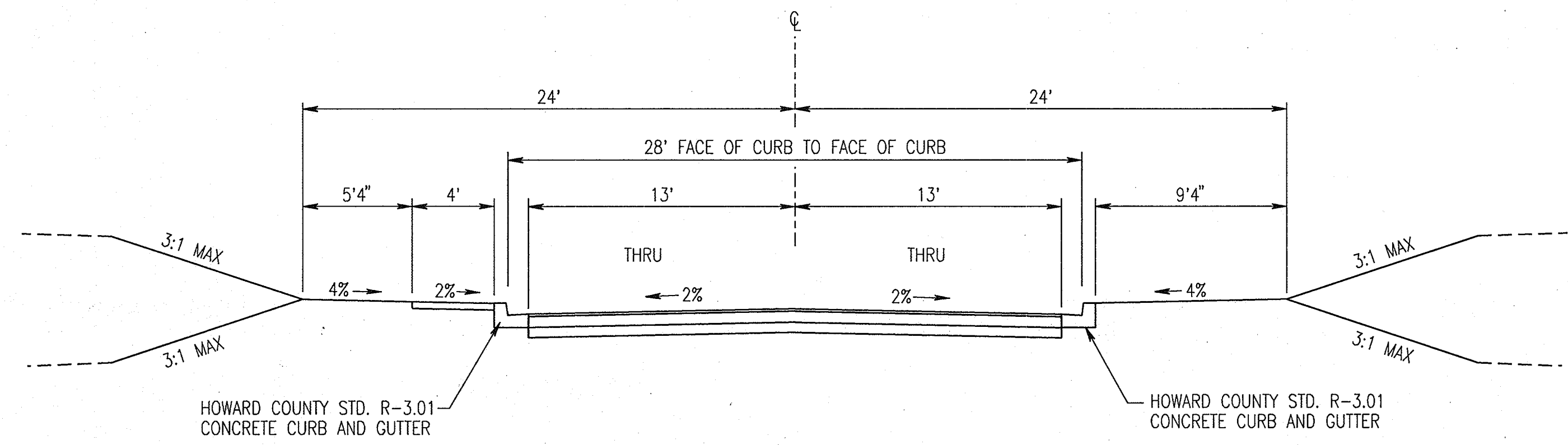
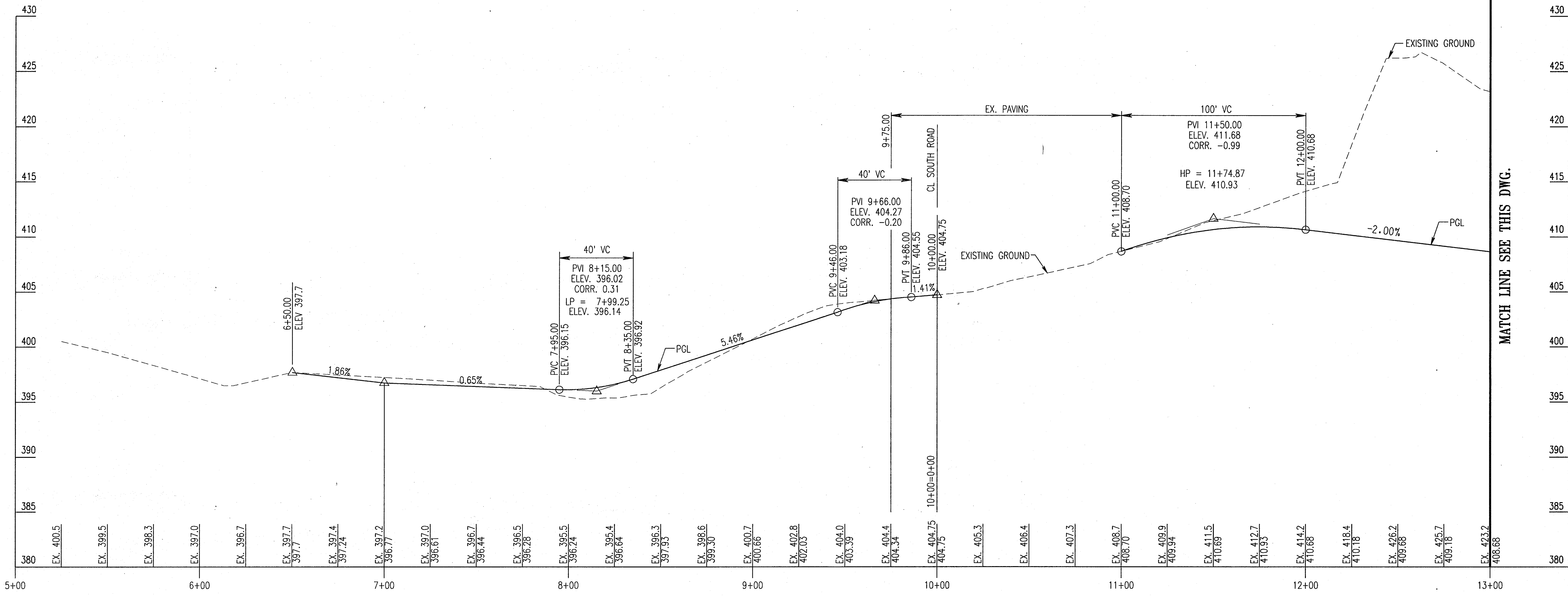
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ROAD PROFILES

DRAWING NO. **C202**

Sheet 42 of 77

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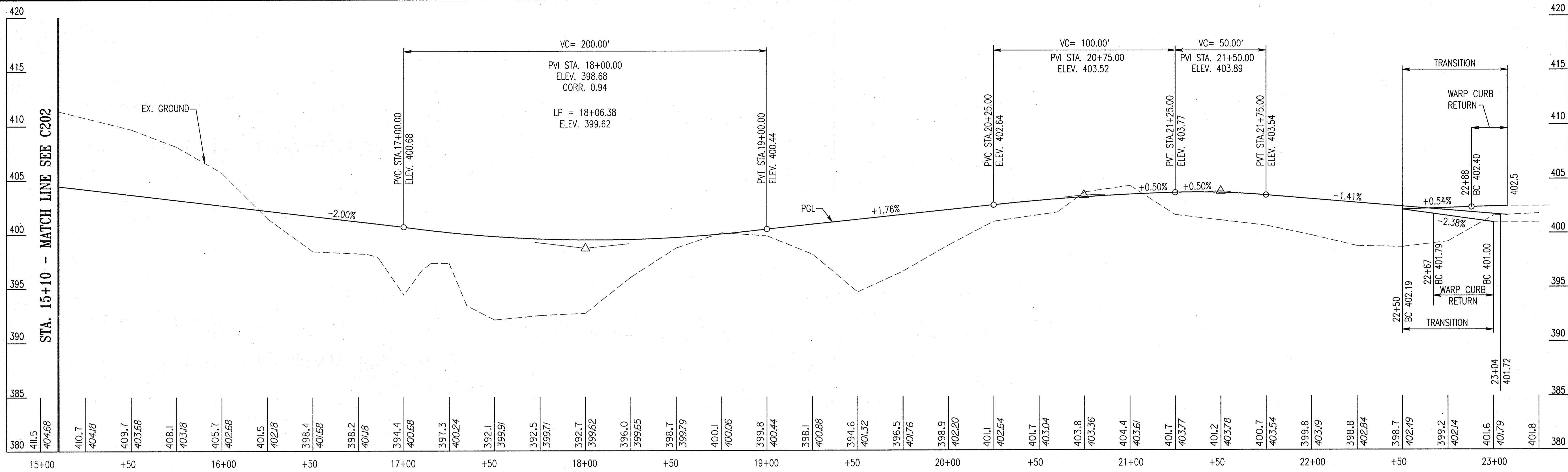


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[Signature] 4/20/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

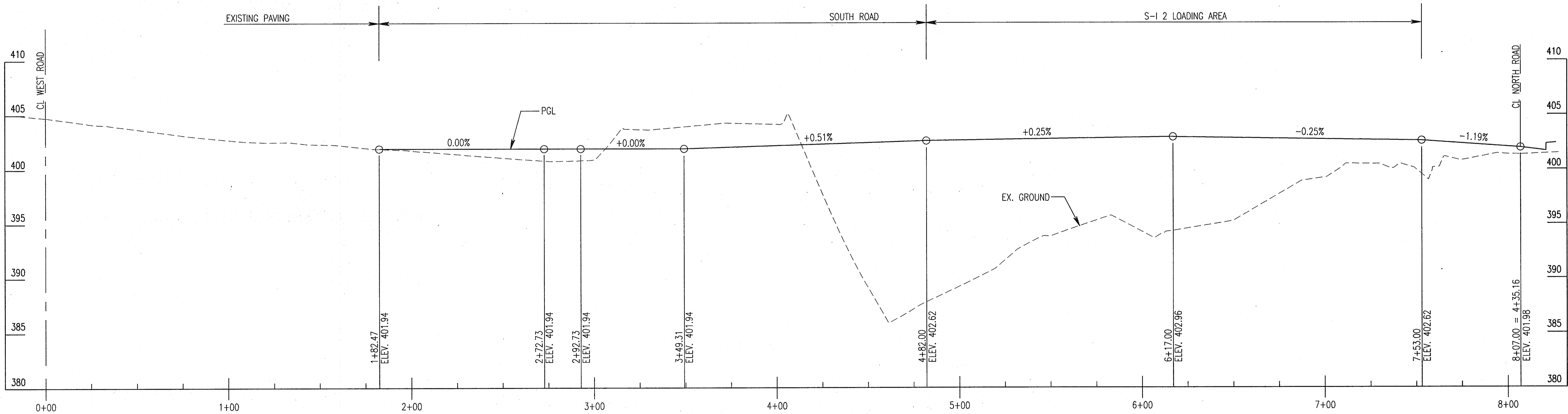
[Signature] 4/22/05
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 4/24/05
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CENTER SERVICE ROAD PROFILE

SCALE: 1" = 30' HORIZ
1" = 5' VERT



SOUTH ROAD PROFILE

SCALE: 1" = 30' HORIZ
1" = 5' VERT

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 [Signature] 4/22/05
 CHIEF, DIVISION OF LAND DEVELOPMENT
 [Signature] 4/22/05
 DIRECTOR

ADD RETAINING WALL SHEETS	10/25/05
G BID SET	3/24/05

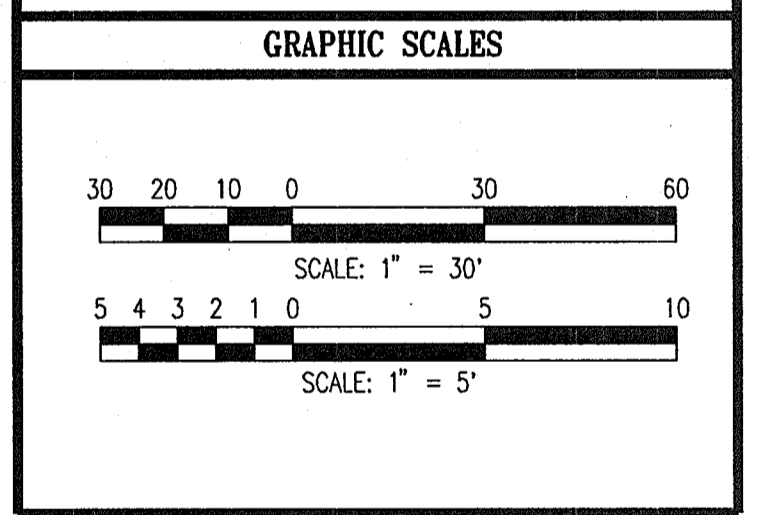
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 LAUREL MARYLAND 20723-6099



SYSTEMS INTEGRATION BUILDINGS AND VAN PAD

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	DRAWING NO.
	C203
Sheet 43 of 77	
Scale: AS SHOWN	
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Checked By: A.U.O.	Date: 03/25/05

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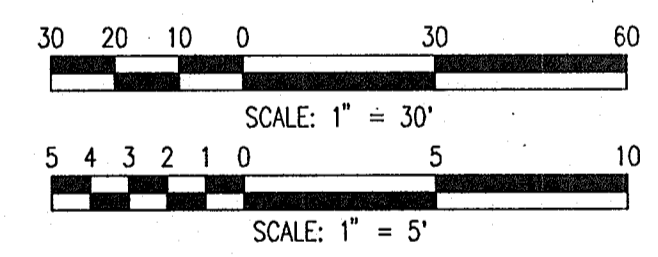


SYSTEMS INTEGRATION BUILDINGS AND VAN PAD

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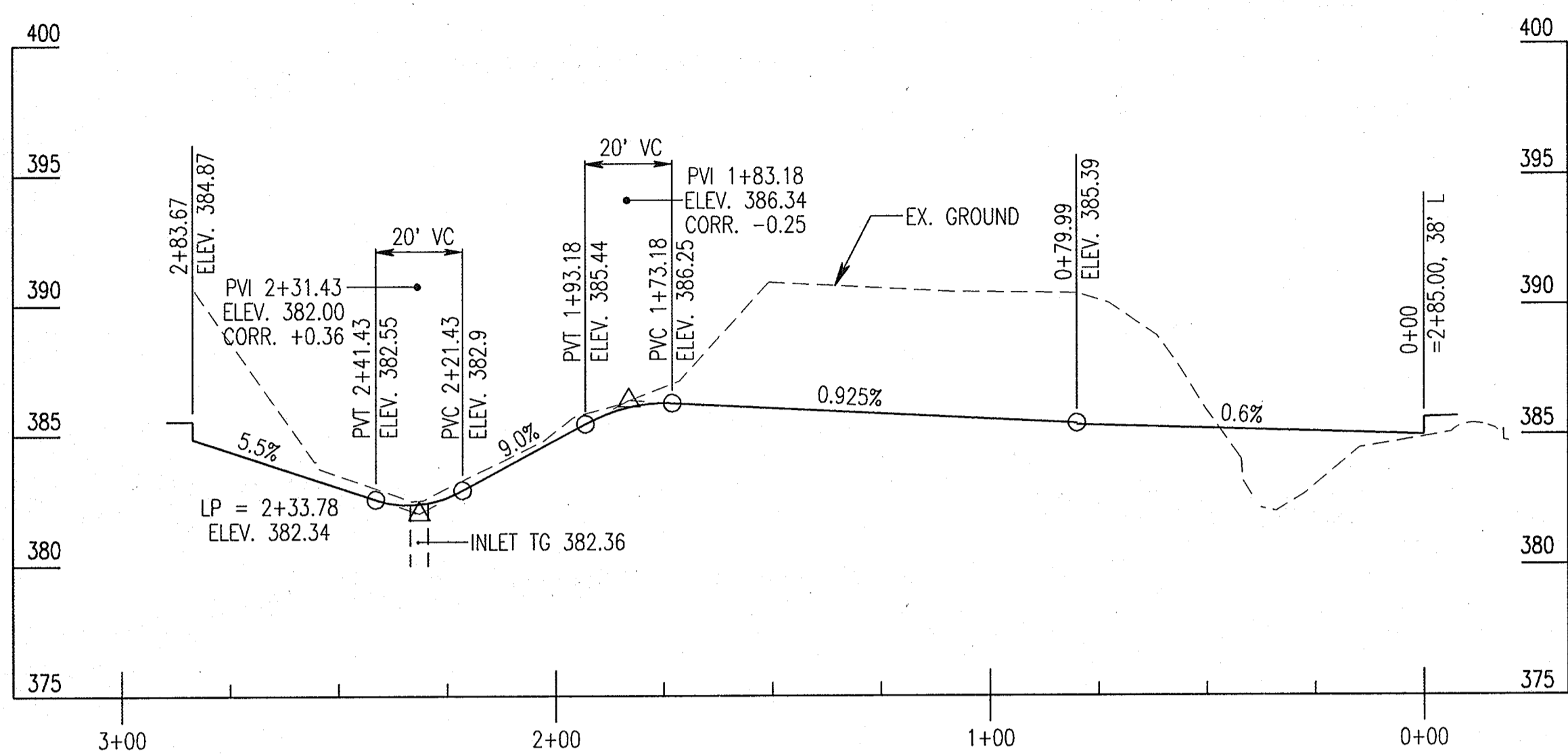
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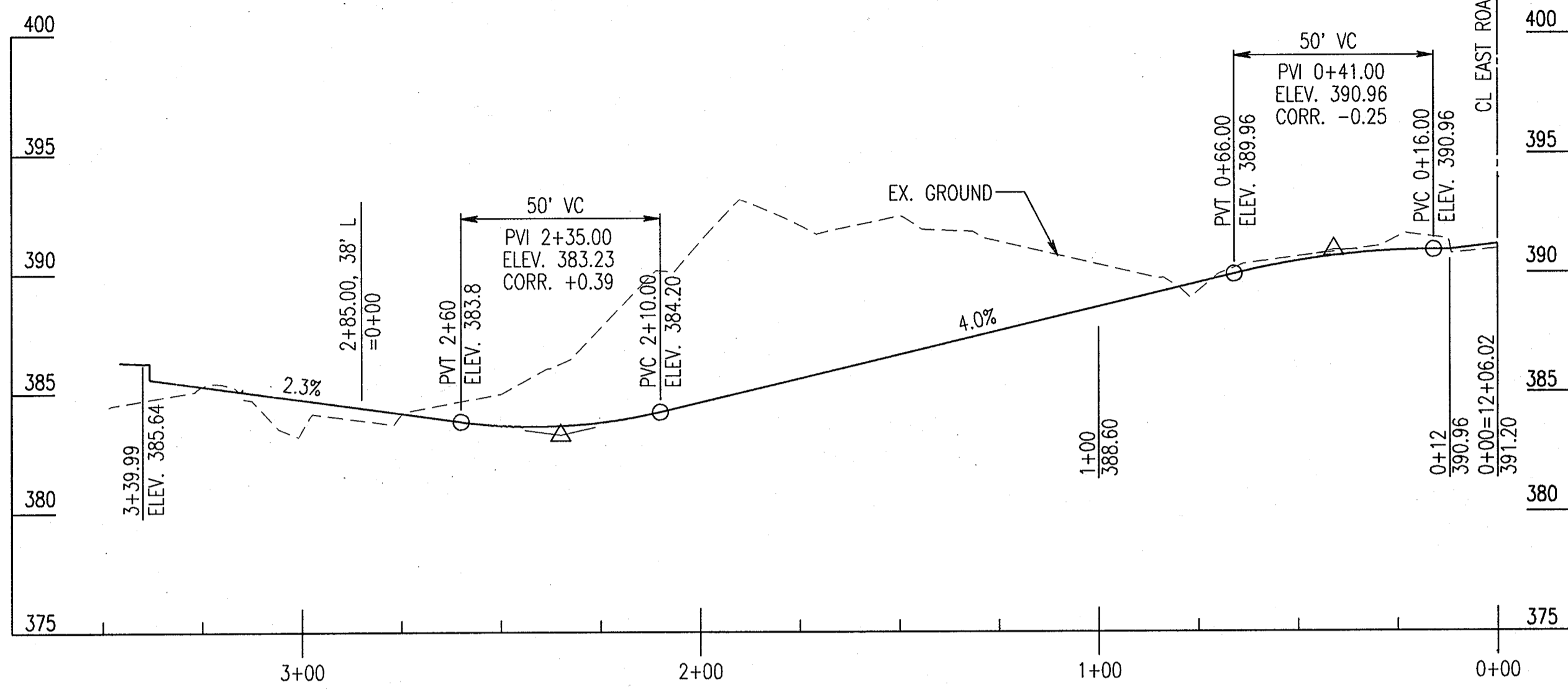
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ROAD PROFILES

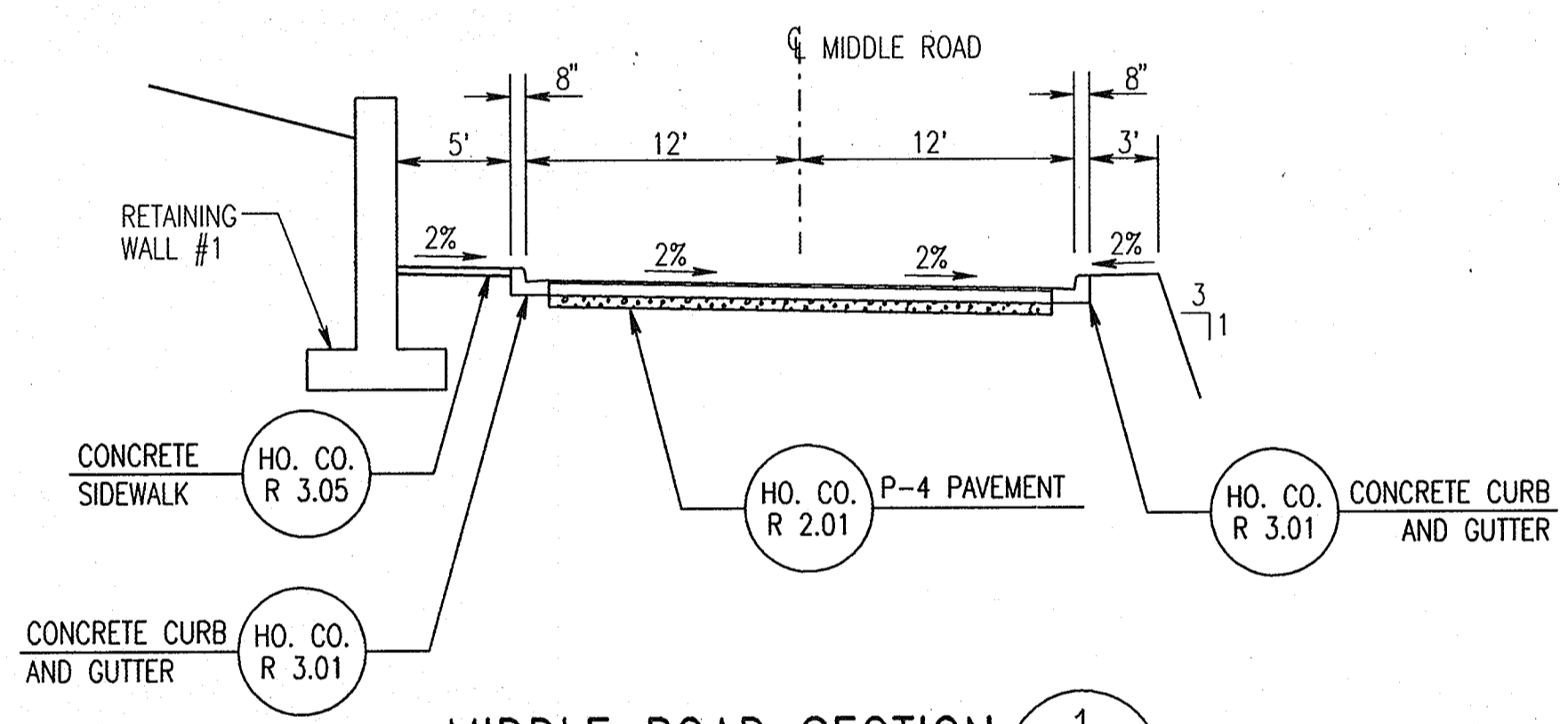
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Sheet 44 of 47	
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Designed By:	R.B.C.
Drawn By:	C.J.K.
Checked By:	A.U.O.
Date:	03/25/05



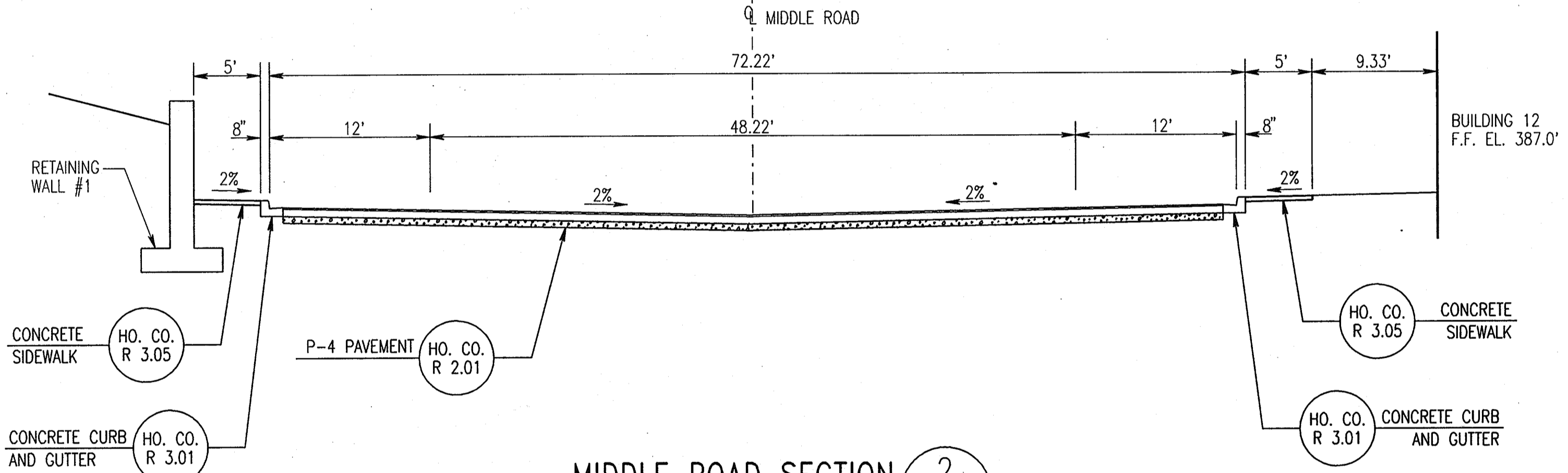
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 SCALE: 1" = 30' HORIZ
 1" = 5' VERT



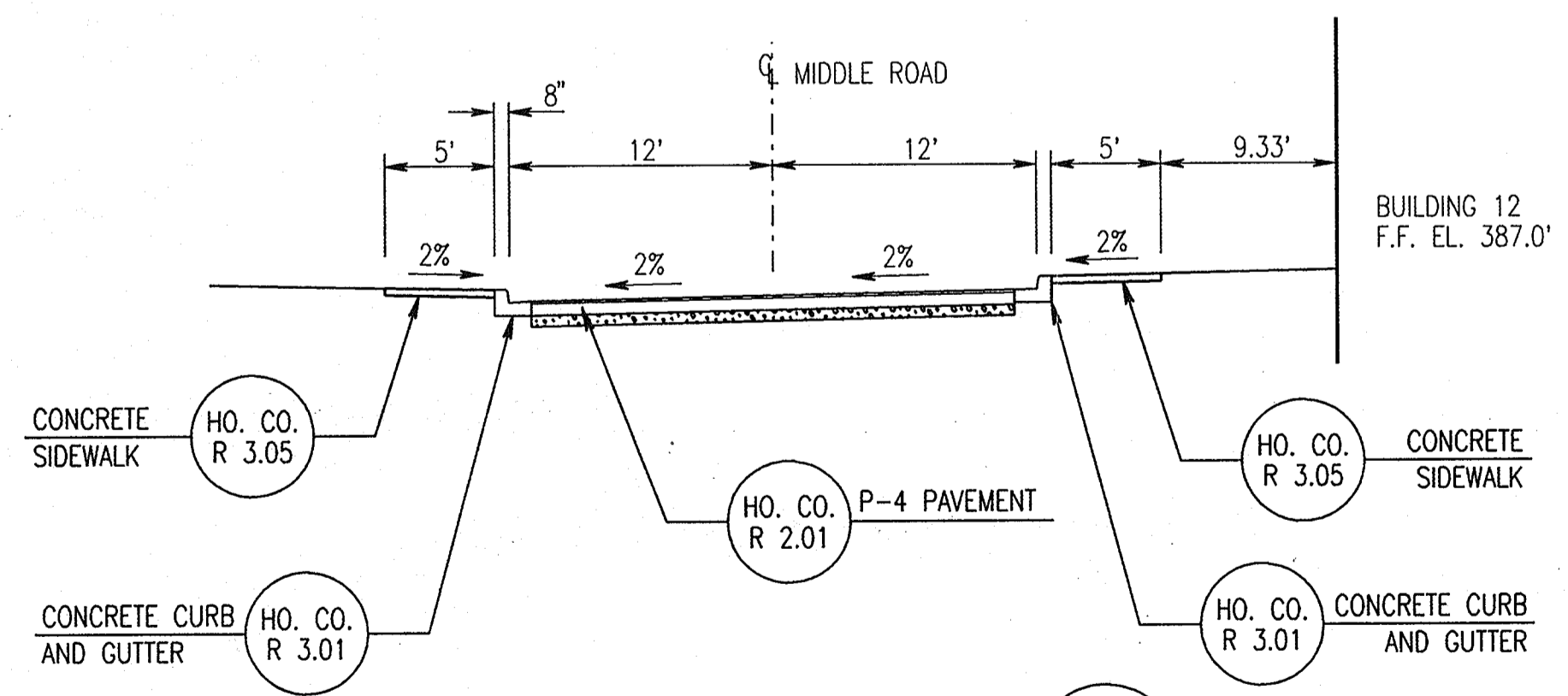
MIDDLE ROAD PROFILE
 SCALE: 1" = 30' HORIZ
 1" = 5' VERT



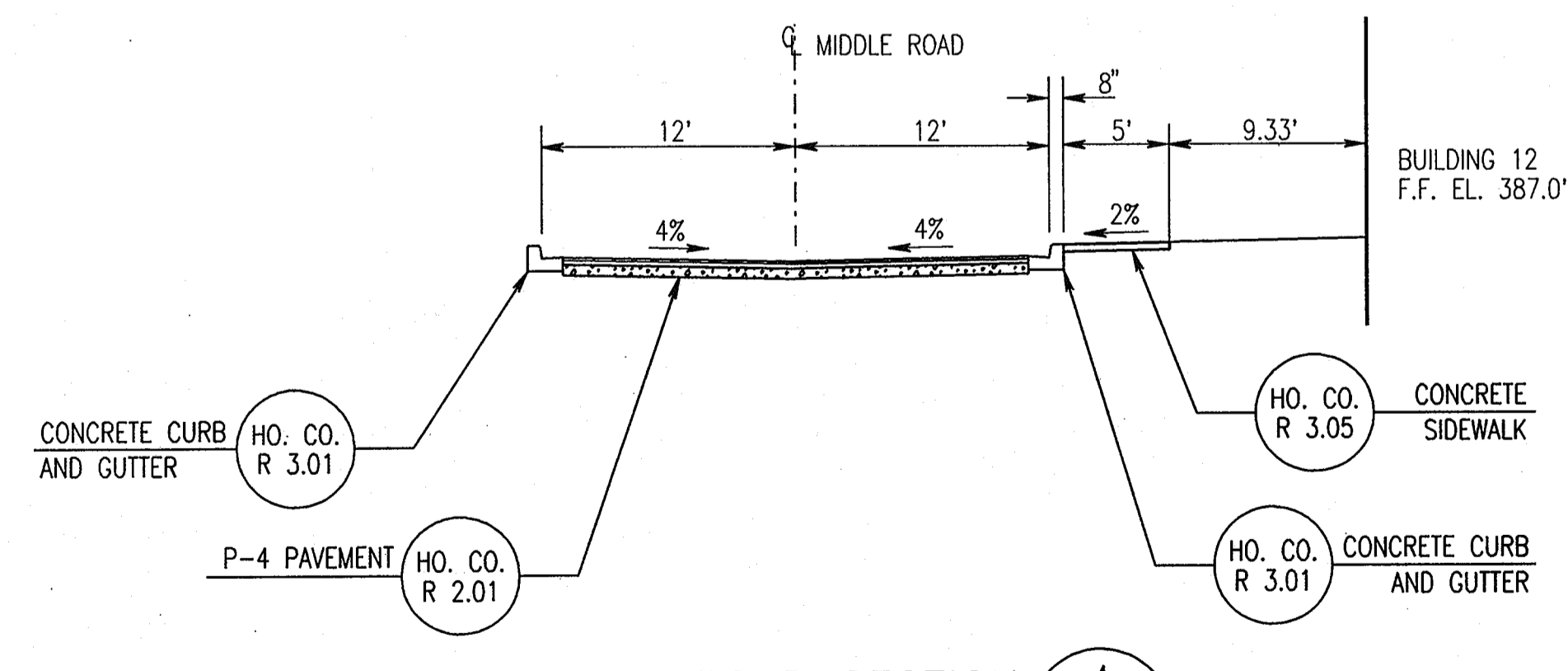
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 C115/C204



MIDDLE ROAD SECTION 2
 NOT TO SCALE
 C115/C204



MIDDLE ROAD SECTION 3
 NOT TO SCALE
 C115/C204



MIDDLE ROAD SECTION 4
 NOT TO SCALE
 C115/C204

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 [Signature] 4/22/05
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 [Signature] 4/22/05
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ADD RETAINING WALL SHEETS	10/25/05
G BID SET	3/24/05

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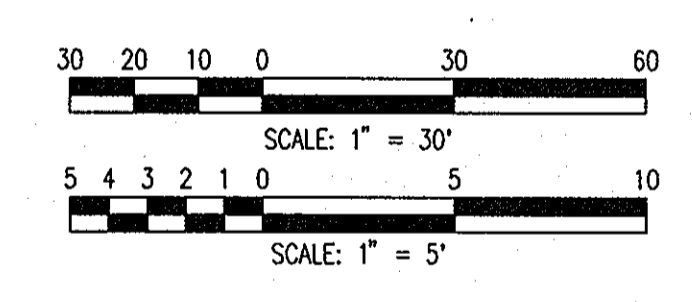


SYSTEMS INTEGRATION BUILDINGS AND VAN PAD

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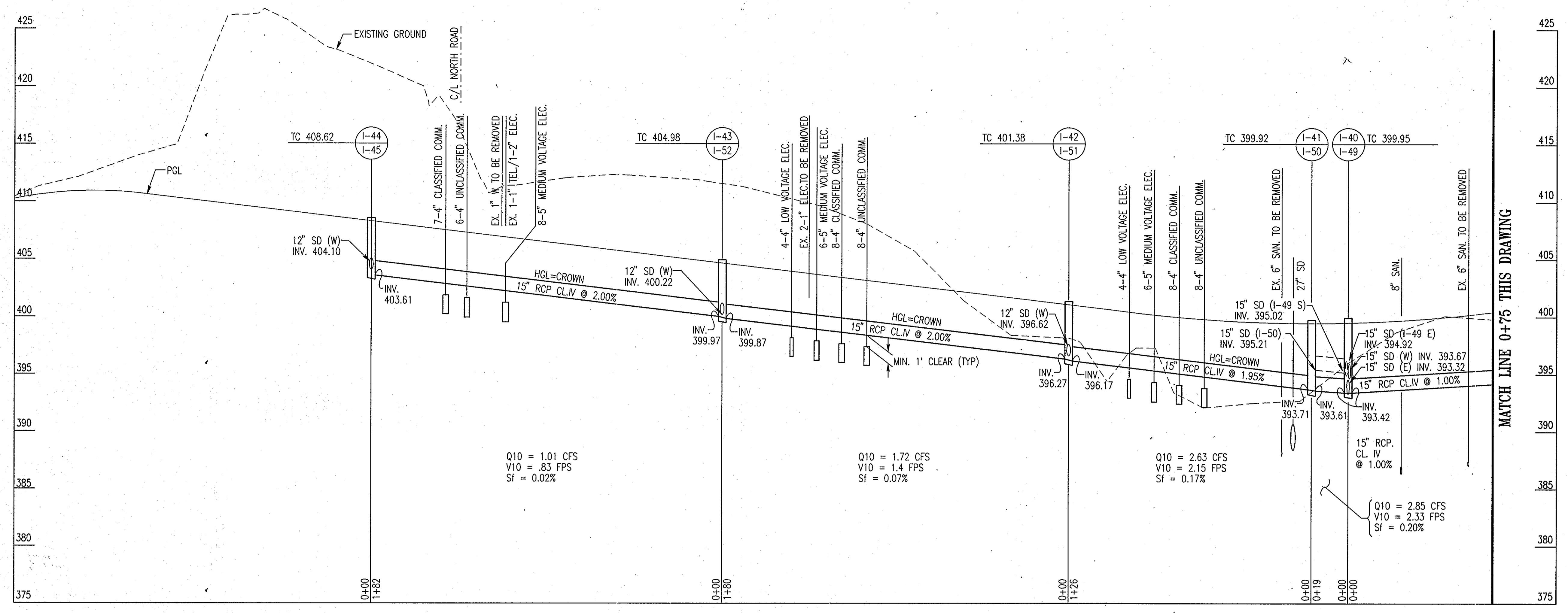
GRAPHIC SCALES



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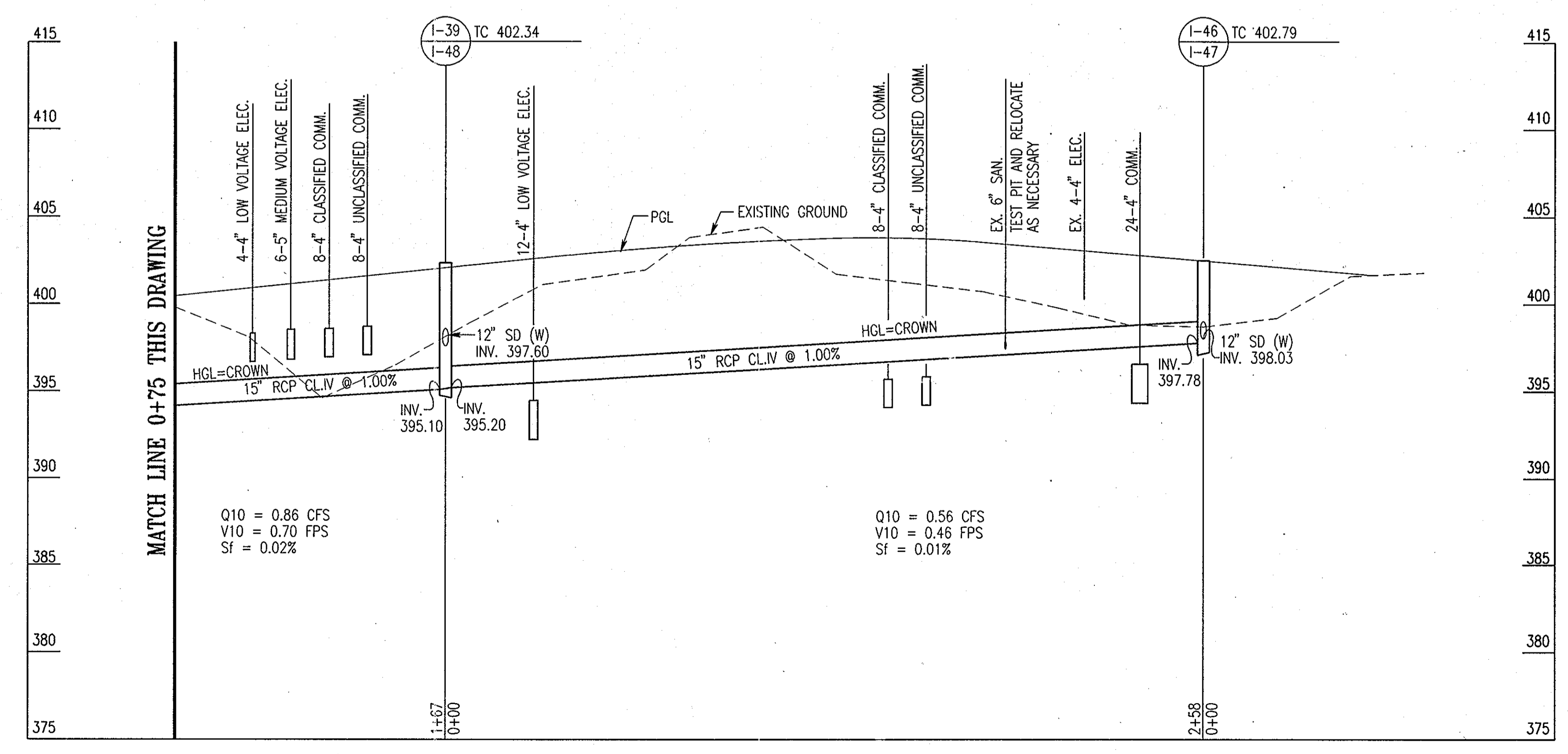
STORM DRAIN PROFILES

	DRAWING NO.
	C205
Sheet 45 of 77	
Scale: AS SHOWN	
Designed By: R.B.C.	Drawn By: C.J.K.
Checked By: A.U.O.	Date: 03/25/05



CENTER SERVICE ROAD STORM DRAIN PROFILE

SCALE: 1" = 30' HORIZ
 1" = 5' VERT

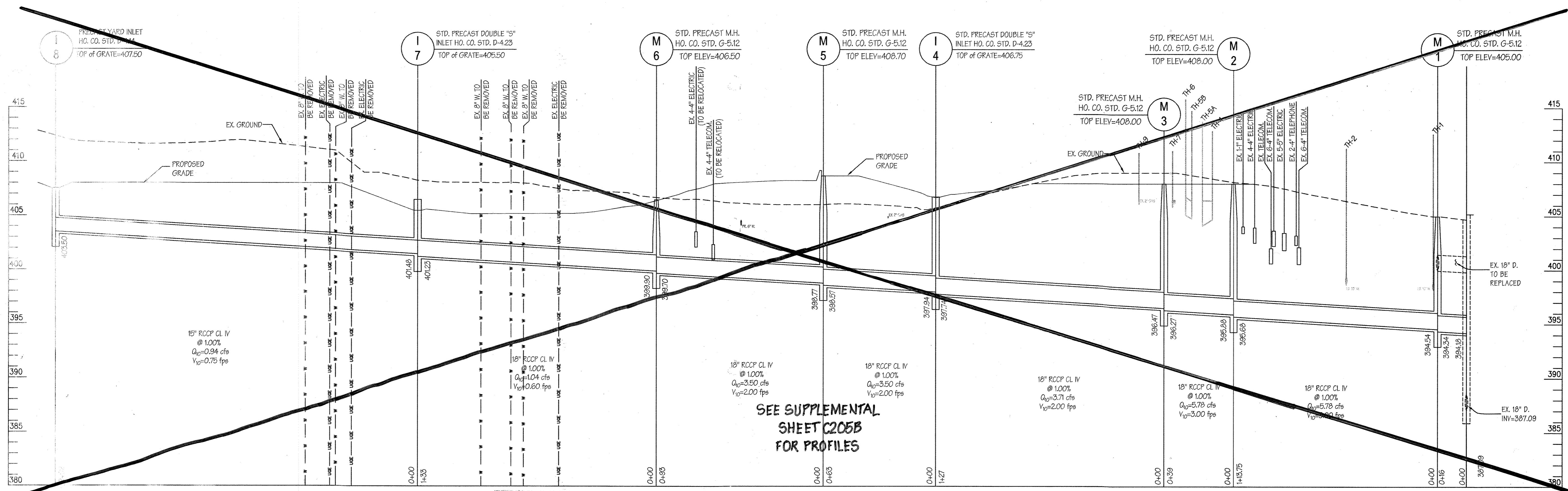


CENTER SERVICE ROAD STORM DRAIN PROFILE

SCALE: 1" = 30' HORIZ
 1" = 5' VERT

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 [Signature] 4/22/05
 CHIEF, DIVISION OF LAND DEVELOPMENT
 [Signature] 4/22/05
 DIRECTOR

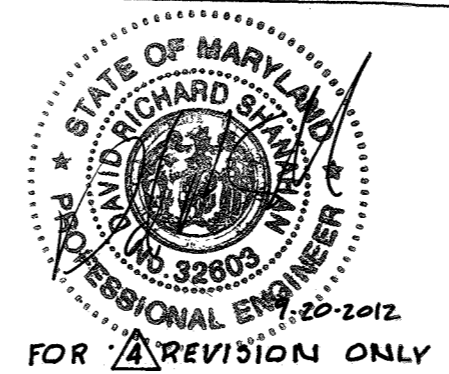
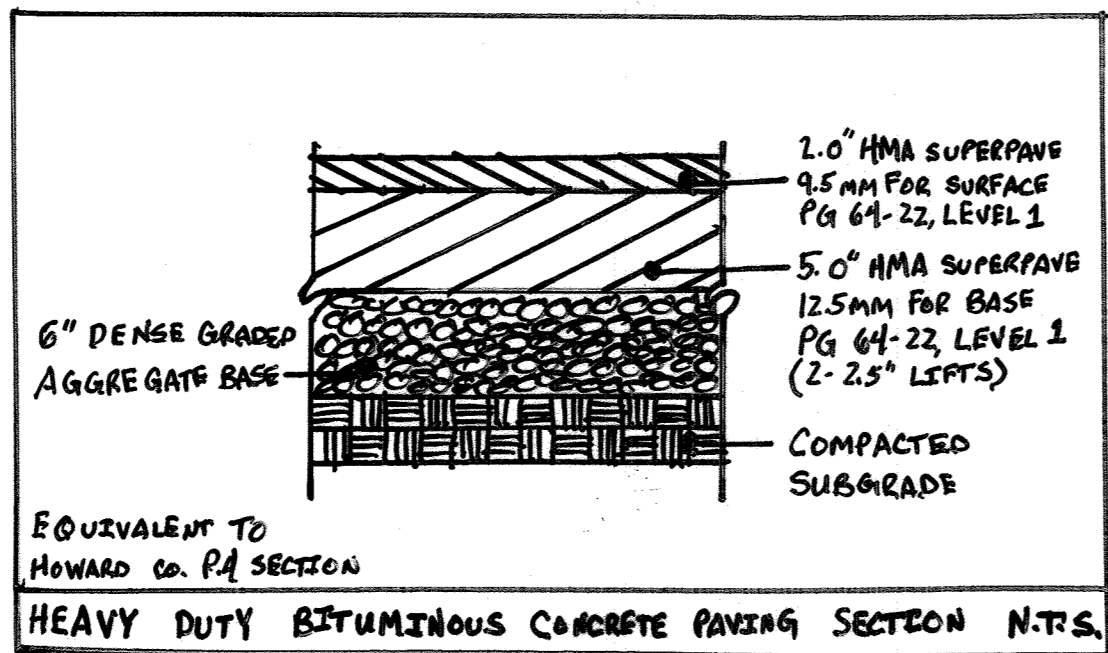
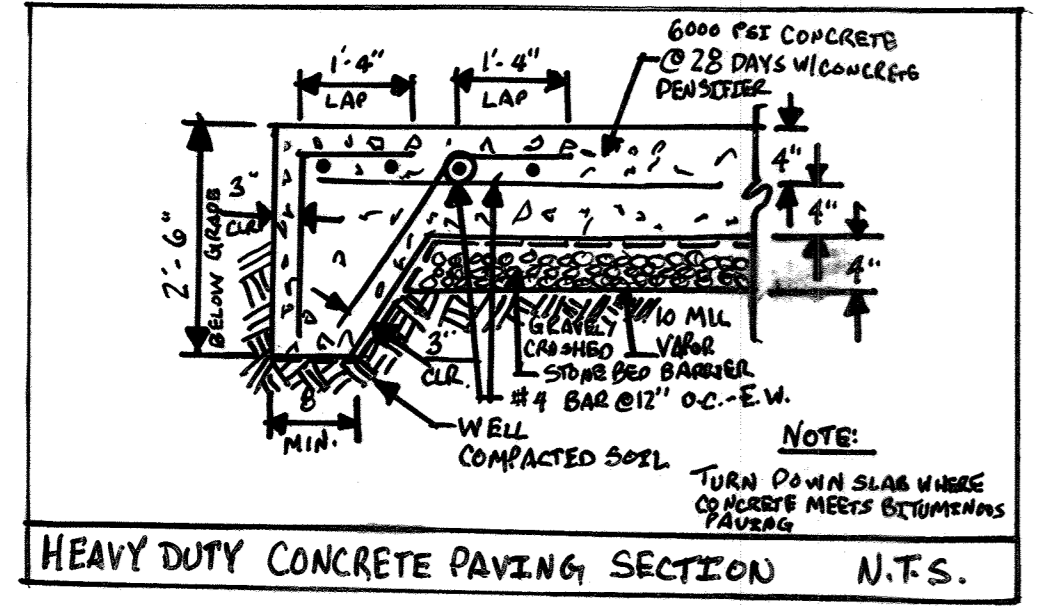
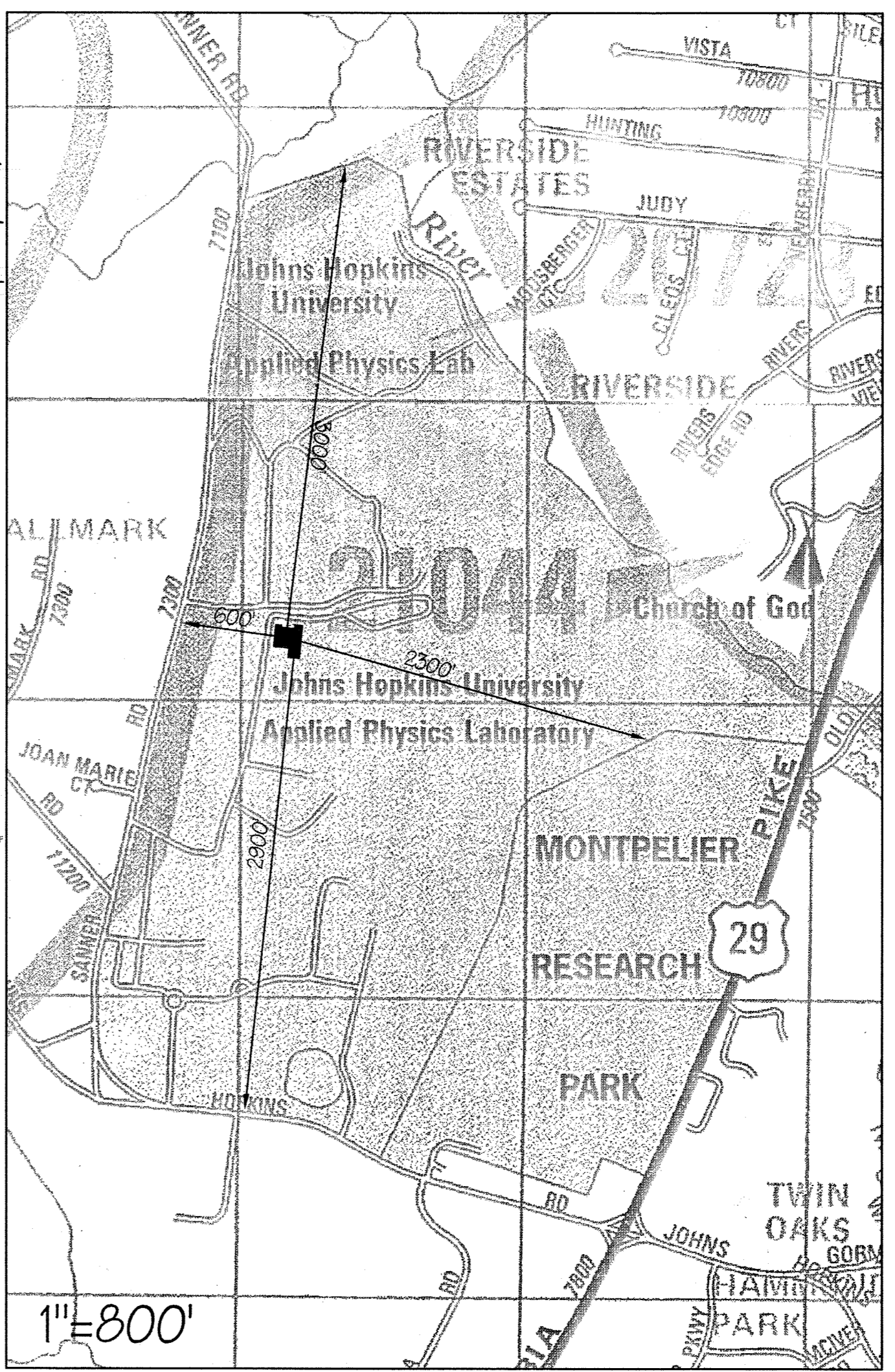
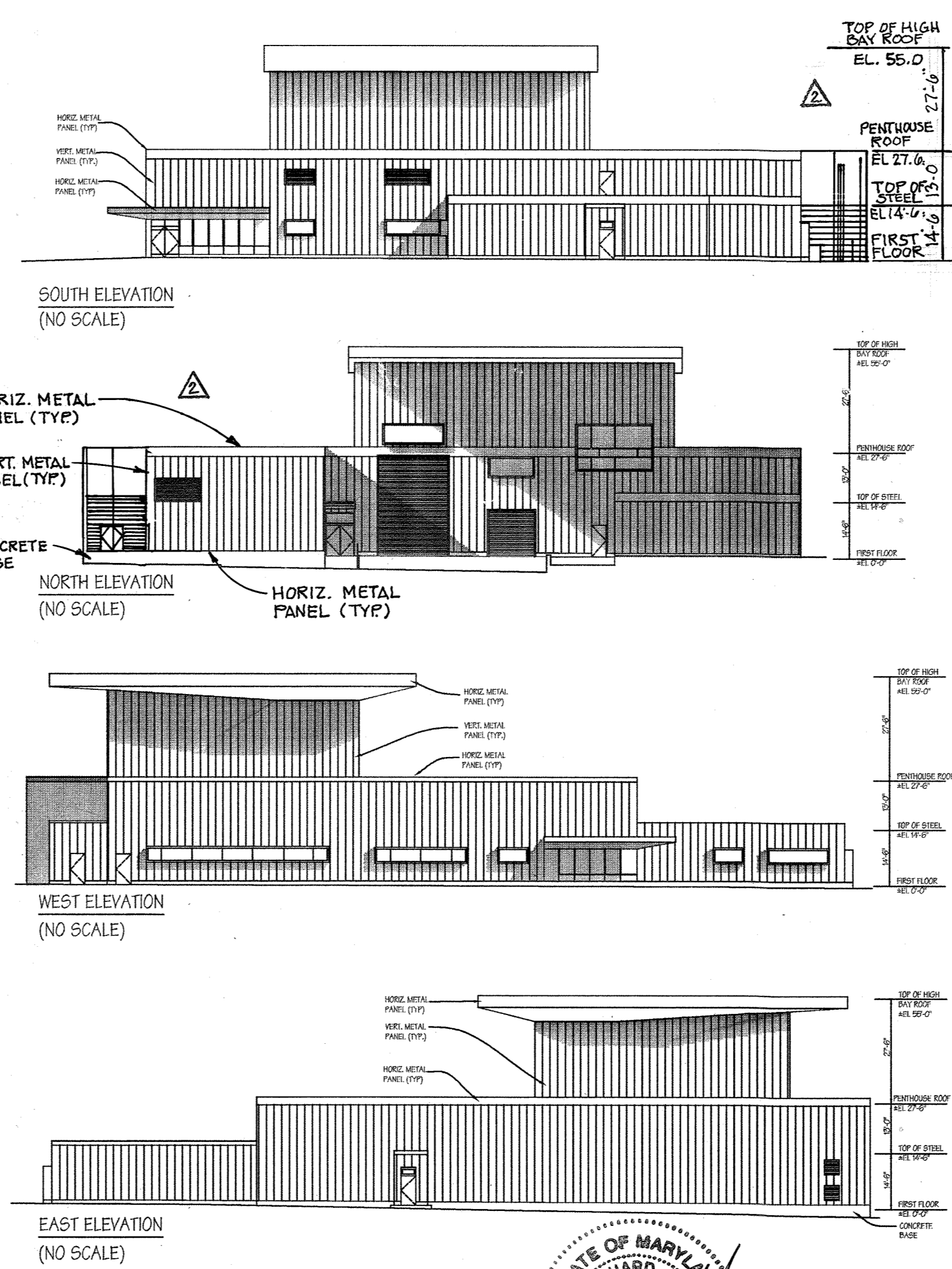
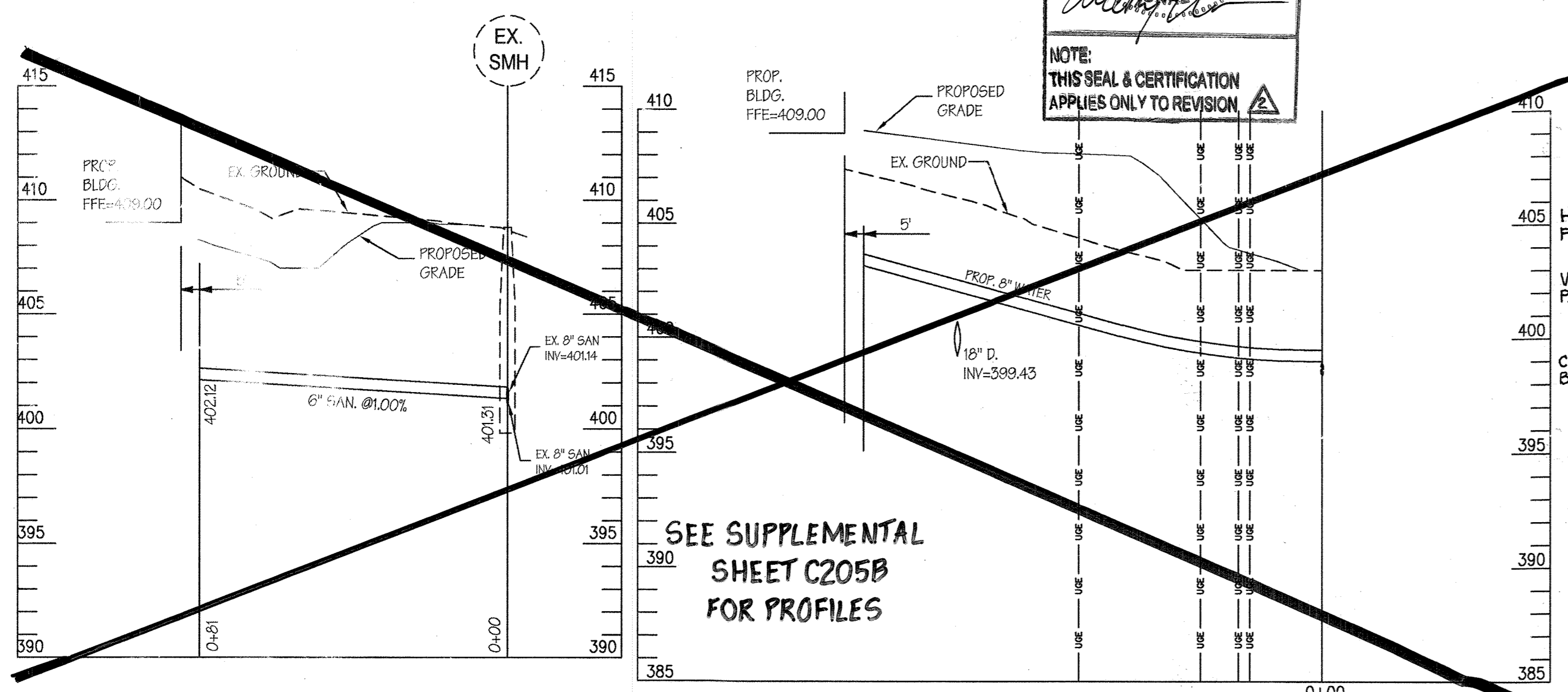
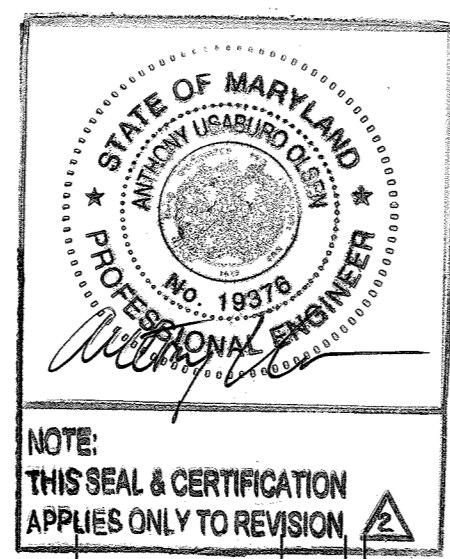
SDP-05-50



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I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 12376
EXPIRATION DATE: SEPTEMBER 22, 2021

PROFILES

Scale: 1"=30' Horiz.
1"=5' Vert.



PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND
LICENSE NUMBER: 32574 EXPIRATION DATE: 1/16/12

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 [Signature] 3/23/10
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE
 [Signature] 3/25/10
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE
 [Signature] 3/25/10
 DIRECTOR DATE

REVISIONS	
UPDATE BLDG ELEVATIONS	01/20
See Supplemental Sheet C205B	8-2-12
BUILDING #30	12-14-09

THE JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
 11100 JOHNS HOPKINS ROAD
 LAUREL MARYLAND 20723-6099

SYSTEMS INTEGRATION BUILDINGS AND VAN PAD

SDP SET

JHU/APL INTERNAL USE

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GRAPHIC SCALES

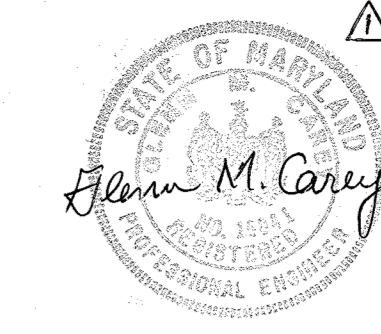
CENTURY ENGINEERING
 CONSULTING ENGINEERS - PLANNERS
 10710 Gilroy Road, Hunt Valley, MD 21031
 Phone: 443.589.2400 Fax: 443.589.2401

BUILDING #30 UTILITY PROFILES SHEET

DRAWING NO. C-205A
 Sheet 45A of 77

Scale: AS SHOWN
 Designed By: RDT/AJD Drawn By: RDT
 Checked By: AJD Date: 12/14/09

SDP-05-050



REVISIONS		
REINFORCED CONC. EQUIP. SLAB	2-8-2018	
ADDITION TO BLDG.	1/20	
Supplemental Sheet	8-2-2012	

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SYSTEMS INTEGRATION BUILDINGS AND VAN PAD

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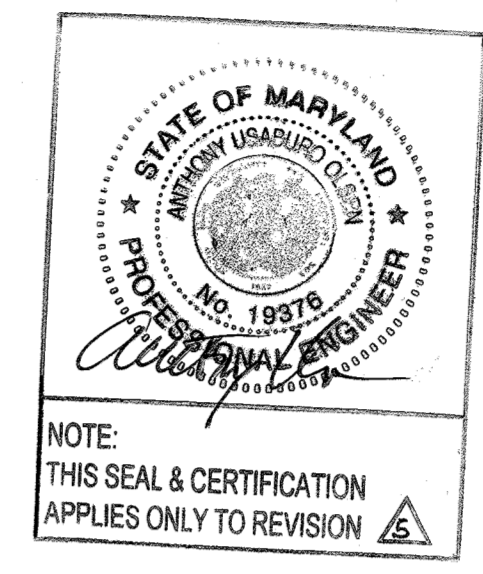
GRAPHIC SCALES

CENTURY ENGINEERING

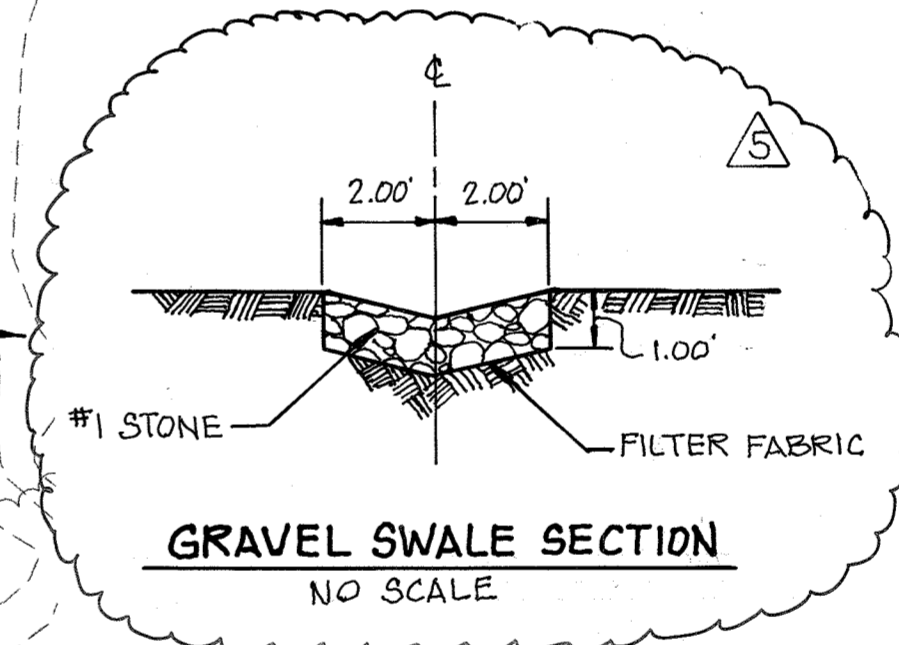
CONSULTING ENGINEERS - PLANNERS
 10710 Gilroy Road, Hunt Valley, MD 21031
 Phone: 443.589.2400 Fax: 443.589.2401

BUILDING#30 SUPPLEMENTAL SITE PLAN

DRAWING NO. **C-121A**
 Sheet 45 of 77
 Scale:
 Designed By: RDT/AJD Drawn By: RDT
 Checked By: AJD Date: 12/14/09



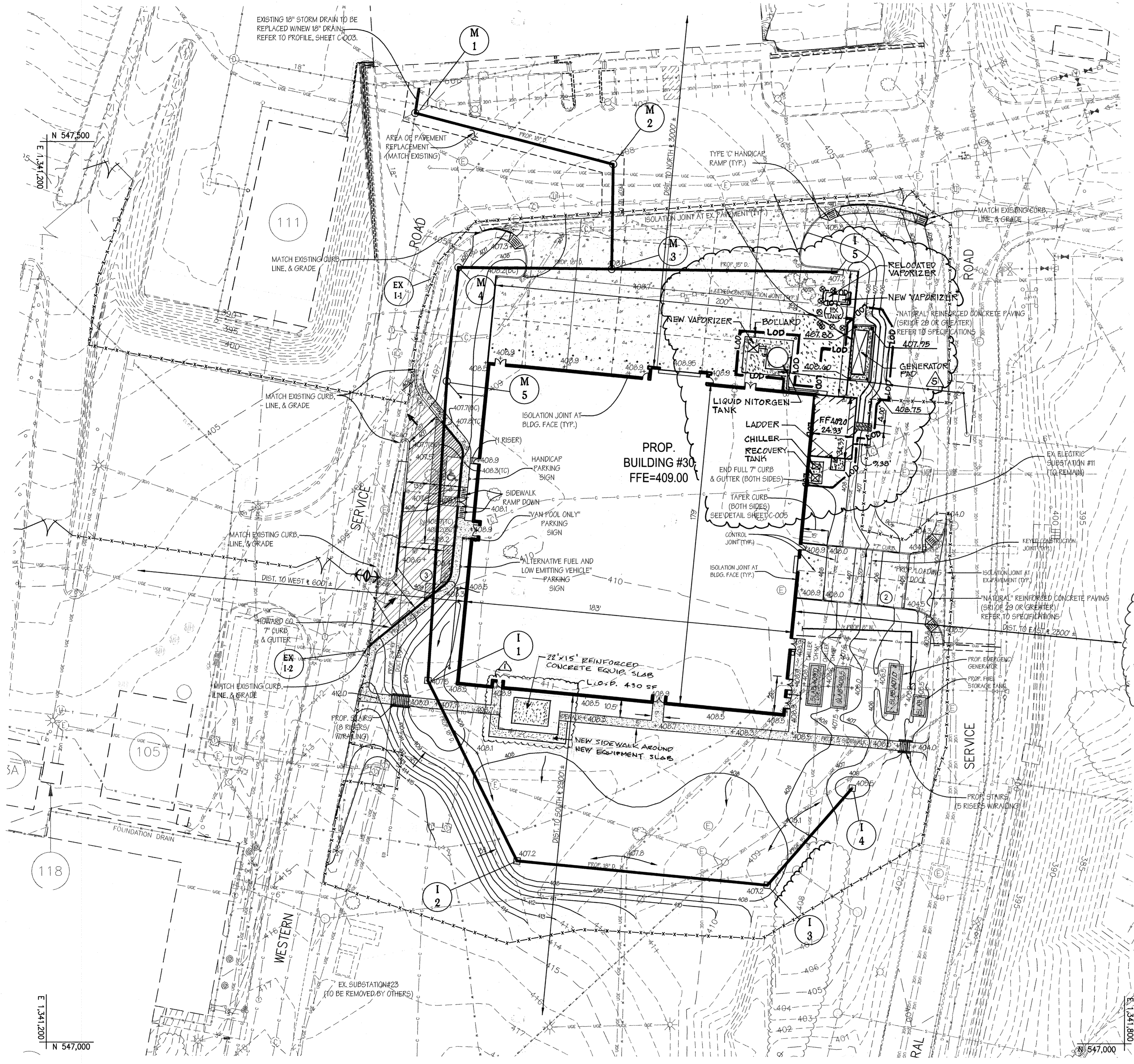
PROFESSIONAL CERTIFICATION.
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 12376 EXPIRATION DATE: SEPTEMBER 22, 2021



IF THIS DRAWING IS A REDUCTION, GRAPHIC SCALE MUST BE USED.
 30' 15' 0' 30'

SCALE: 1"=30'-0"

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
 LICENSE NUMBER: 32623 EXPIRATION DATE: 1-18-2014



PLAN
 Scale: 1"=30'

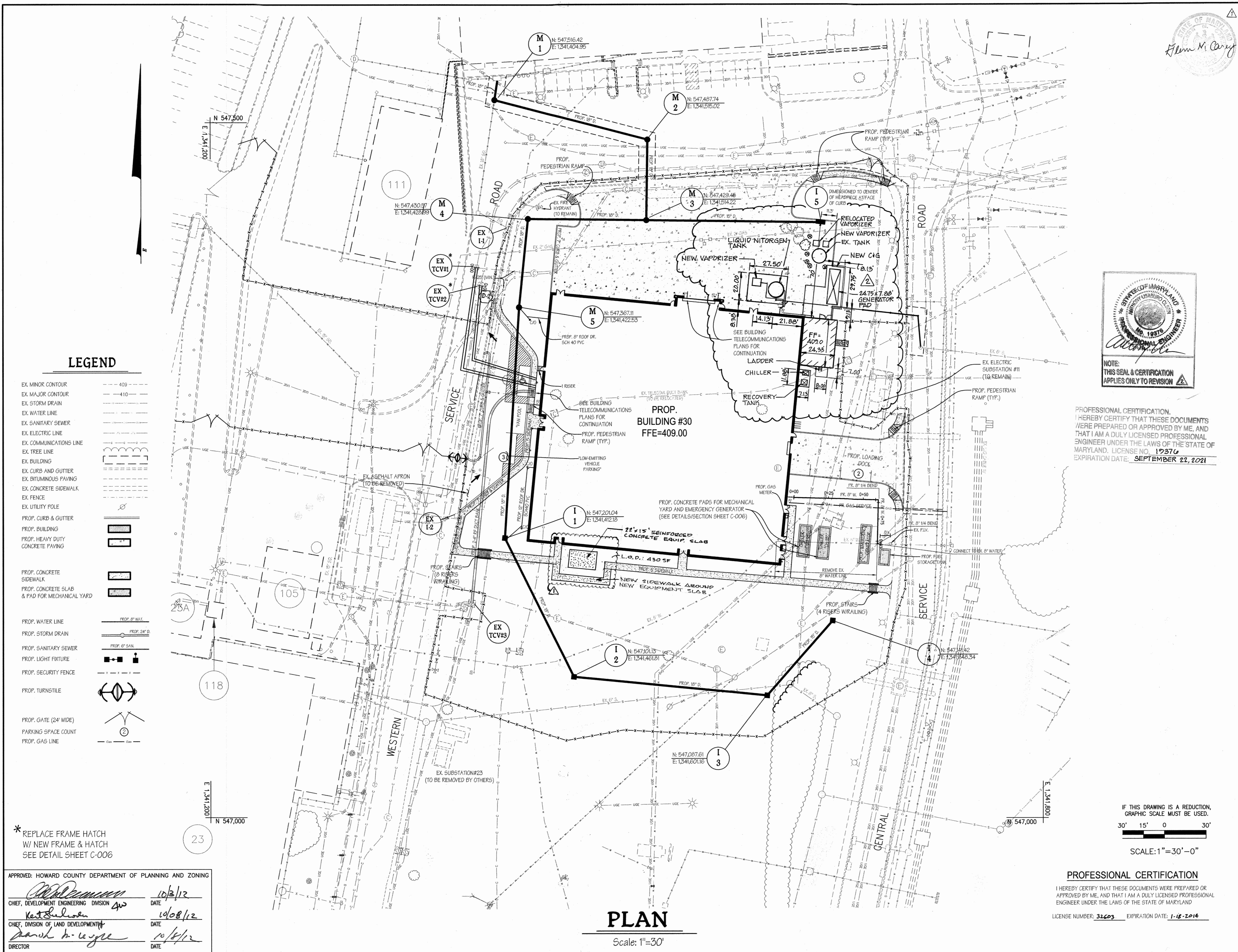
LEGEND

- EX. MINOR CONTOUR --- 409
- EX. MAJOR CONTOUR --- 410
- EX. STORM DRAIN ---
- EX. WATER LINE ---
- EX. SANITARY SEWER ---
- EX. ELECTRIC LINE ---
- EX. COMMUNICATIONS LINE ---
- EX. TREE LINE ---
- EX. BUILDING ---
- EX. CURB AND GUTTER ---
- EX. BITUMINOUS PAVING ---
- EX. CONCRETE SIDEWALK ---
- EX. FENCE ---
- EX. UTILITY POLE ---
- PROP. CURB & GUTTER ---
- PROP. CURB & GUTTER (REVERSE SLOPE GUTTER PAN) ---
- PROP. BUILDING ---
- PROP. HEAVY DUTY CONCRETE PAVING ---
- PROP. BITUMINOUS CONCRETE PAVING ---
- PROP. CONCRETE SIDEWALK ---
- PROP. CONCRETE SLAB & PAD FOR MECHANICAL YARD ---
- PROP. SECURITY FENCE ---
- PROP. TURNSTILE ---
- PROP. GATE (24' WIDE) ---
- PARKING SPACE COUNT ---
- TEST HOLE ---
- TOP OF CURB (TC) ---
- BOTTOM OF CURB (BC) ---

* REPLACE FRAME HATCH W/ NEW FRAME & HATCH SEE DETAIL SHEET C-006

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING	
CHIEF, DEVELOPMENT ENGINEERING DIVISION	10/3/12
CHIEF, DIVISION OF LAND DEVELOPMENT	10/08/12
DIRECTOR	10/15/12

SDP-05-050



LEGEND

- EX. MINOR CONTOUR --- 409 ---
- EX. MAJOR CONTOUR --- 410 ---
- EX. STORM DRAIN ---
- EX. WATER LINE ---
- EX. SANITARY SEWER ---
- EX. ELECTRIC LINE ---
- EX. COMMUNICATIONS LINE ---
- EX. TREE LINE ---
- EX. BUILDING ---
- EX. CURB AND GUTTER ---
- EX. BITUMINOUS PAVING ---
- EX. CONCRETE SIDEWALK ---
- EX. FENCE ---
- EX. UTILITY POLE ---
- PROP. CURB & GUTTER ---
- PROP. BUILDING ---
- PROP. HEAVY DUTY CONCRETE PAVING ---
- PROP. CONCRETE SIDEWALK ---
- PROP. CONCRETE SLAB & PAD FOR MECHANICAL YARD ---
- PROP. WATER LINE ---
- PROP. STORM DRAIN ---
- PROP. SANITARY SEWER ---
- PROP. LIGHT FIXTURE ---
- PROP. SECURITY FENCE ---
- PROP. TURNSTILE ---
- PROP. GATE (24' WIDE) ---
- PARKING SPACE COUNT ---
- PROP. GAS LINE ---

* REPLACE FRAME HATCH W/ NEW FRAME & HATCH SEE DETAIL SHEET C-006

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Howard County Department of Planning and Zoning

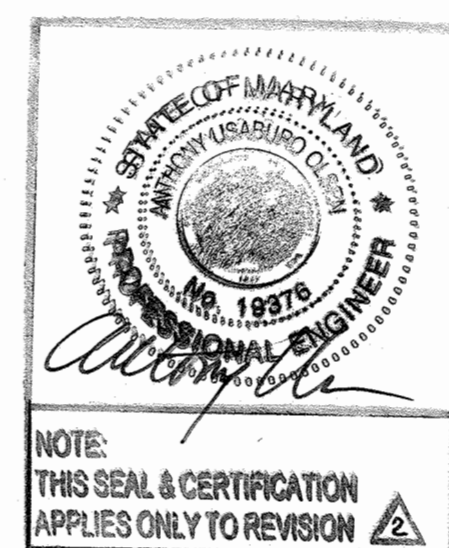
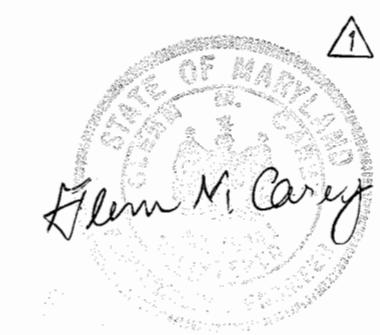
CHIEF, DEVELOPMENT ENGINEERING DIVISION *4w* DATE 10/2/12

CHIEF, DIVISION OF LAND DEVELOPMENT *10/08/12* DATE 10/08/12

DIRECTOR *10/16/12* DATE 10/16/12

PLAN

Scale: 1"=30'



PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 12376 EXPIRATION DATE: SEPTEMBER 22, 2021

REVISIONS	
REINFORCED CONC. EQUIP. SLAB	2-8-2018
ADDITION TO BLDG.	1/20
Supplemental Sheet	8-2-2012

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SYSTEMS INTEGRATION BUILDINGS AND VAN PAD

SDP SET

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GRAPHIC SCALES

CENTURY ENGINEERING
 CONSULTING ENGINEERS - PLANNERS
 10710 Glroy Road, Hunt Valley, MD 21031
 Phone: 443.589.2400 Fax: 443.589.2401

BUILDING #30 SUPPLEMENTAL UTILITY PLAN

DRAWING NO. **C-128A**

Sheet 45L of 77

Scale: _____

Designed By: RDT/AJD Drawn By: RDT

Checked By: AJD Date: 12/14/09

IF THIS DRAWING IS A REDUCTION, GRAPHIC SCALE MUST BE USED.

30' 15' 0' 30'

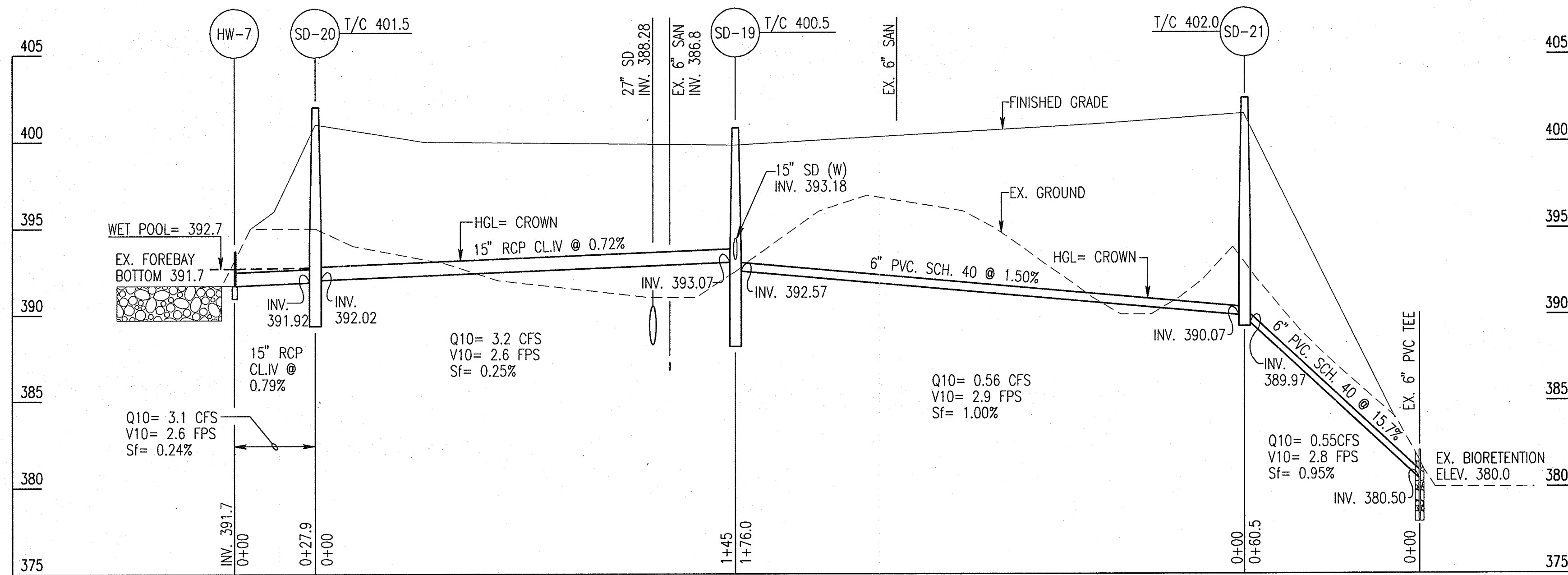
SCALE: 1"=30'-0"

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND

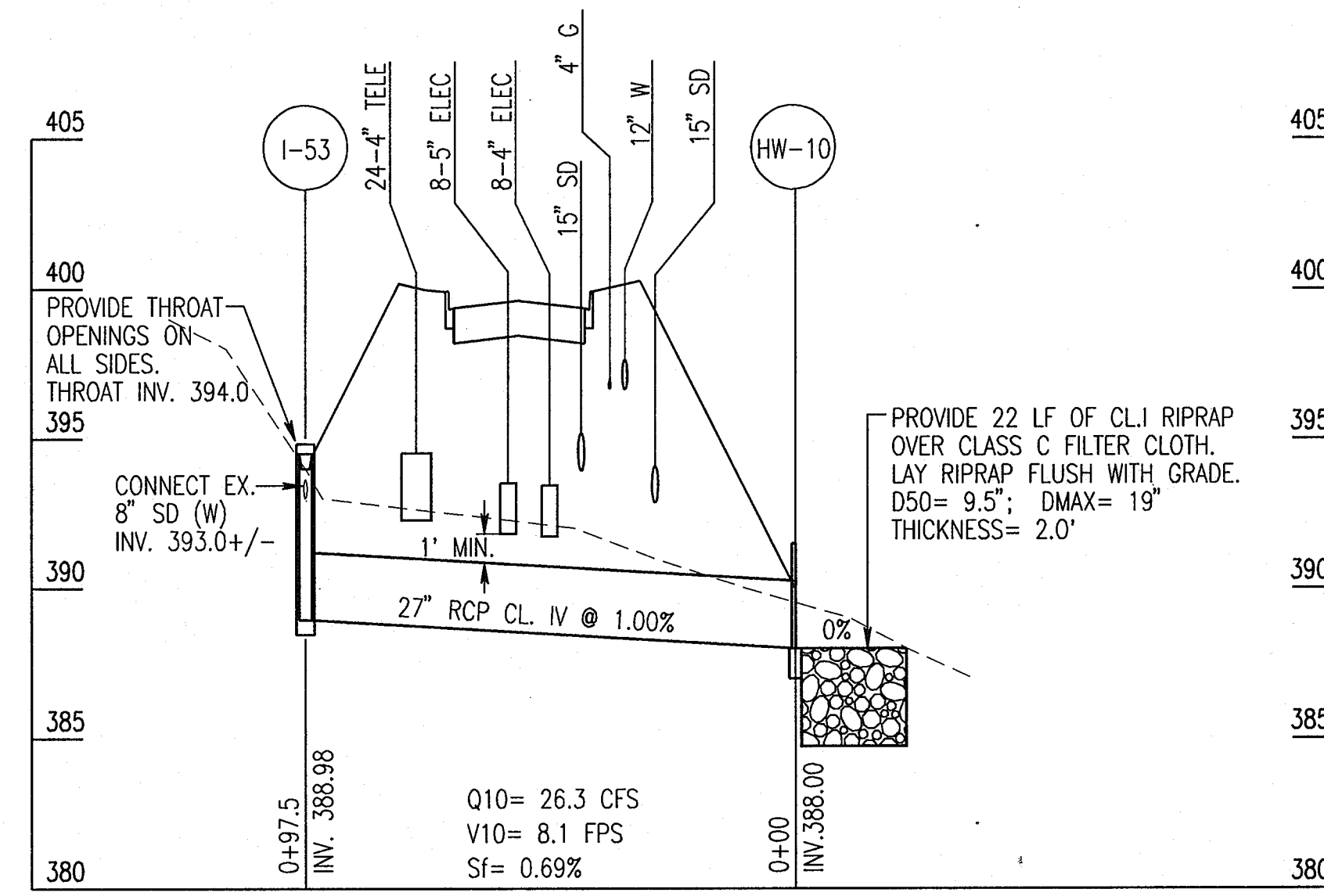
LICENSE NUMBER: 32203 EXPIRATION DATE: 1-18-2014

SDP-05-050



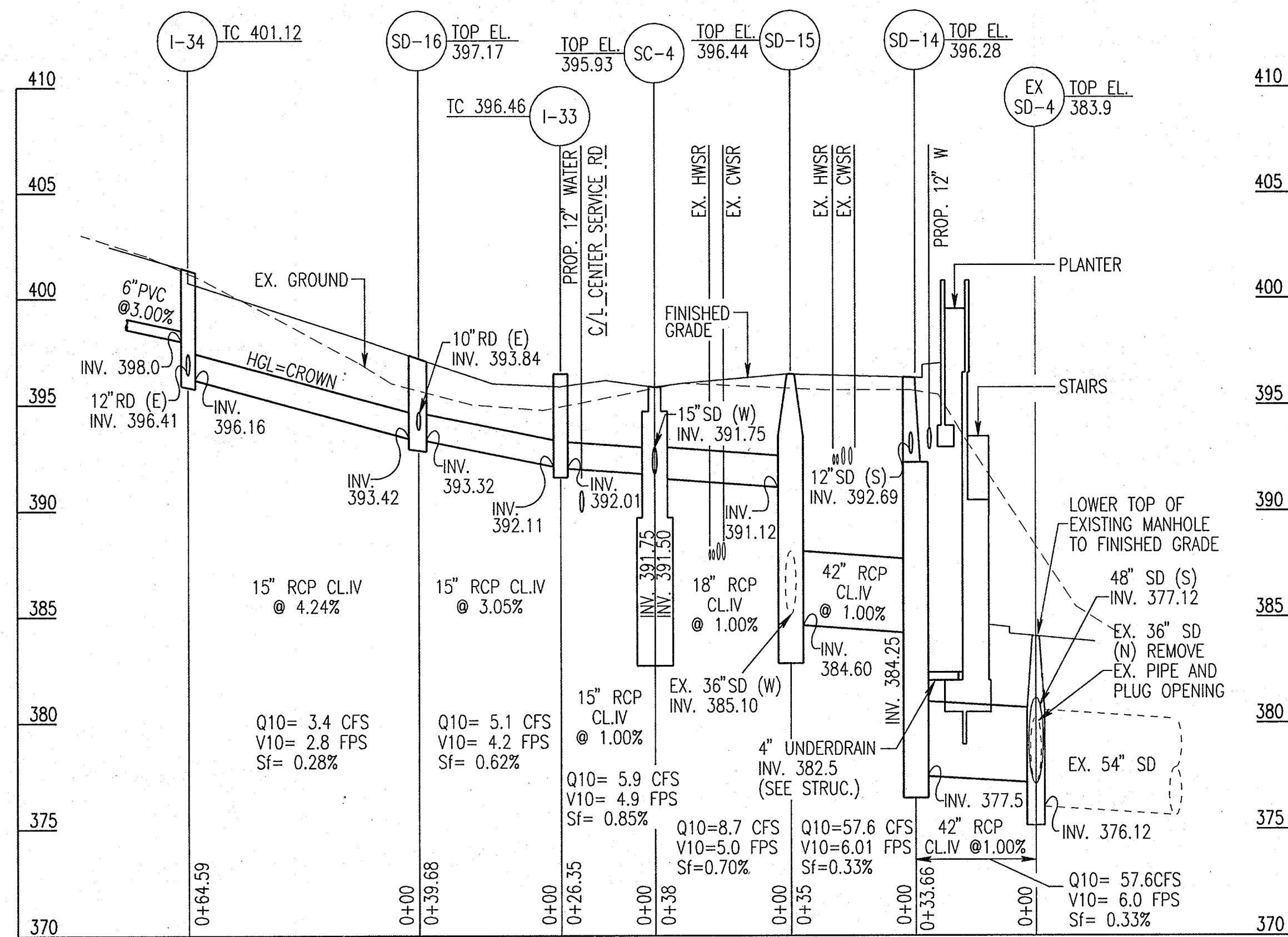
CENTER SERVICE ROAD STORM DRAIN: I-53 TO HW-10

SCALE: 1" = 30' HORIZ
1" = 5' VERT



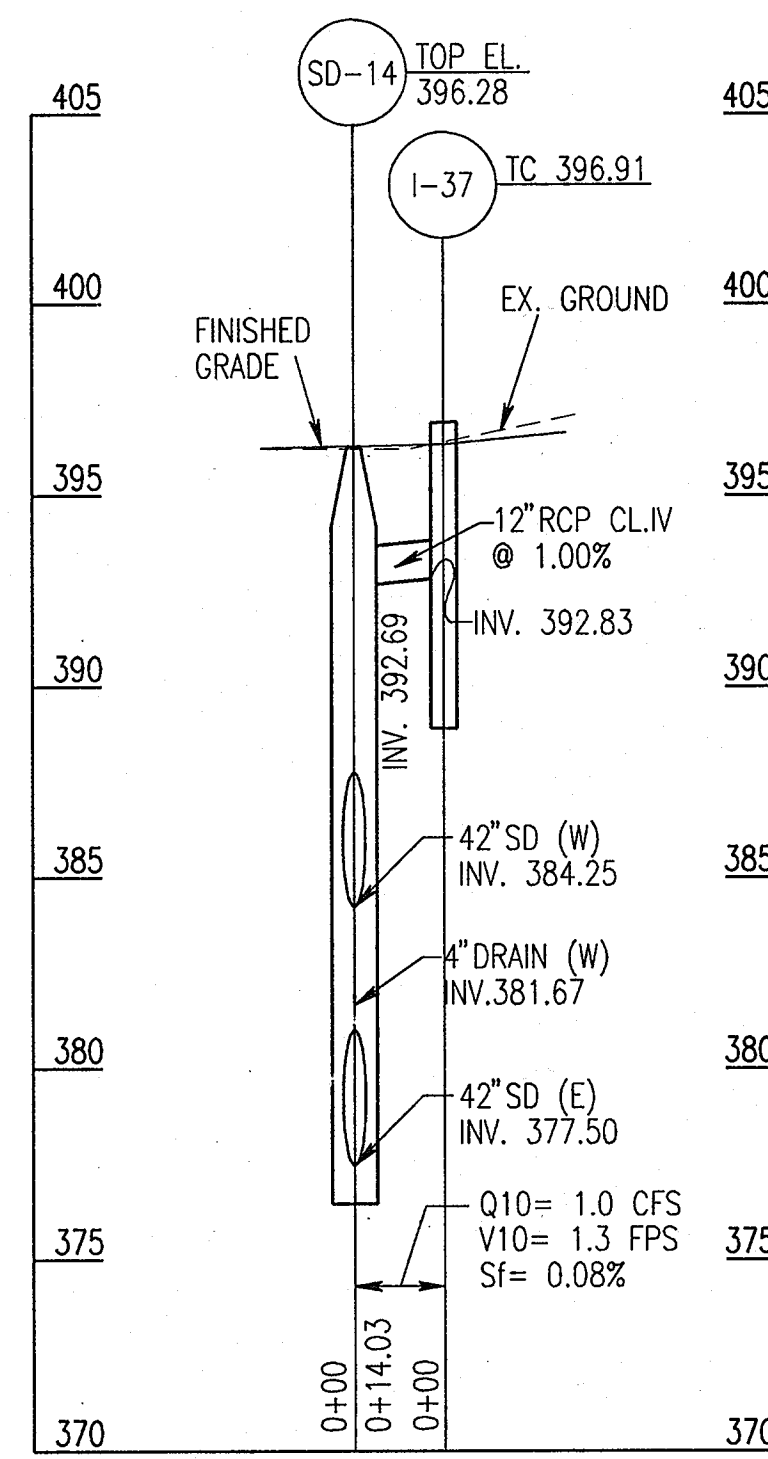
CENTER SERVICE ROAD STORM DRAIN: I-53 TO HW-10

SCALE: 1" = 30' HORIZ
1" = 5' VERT



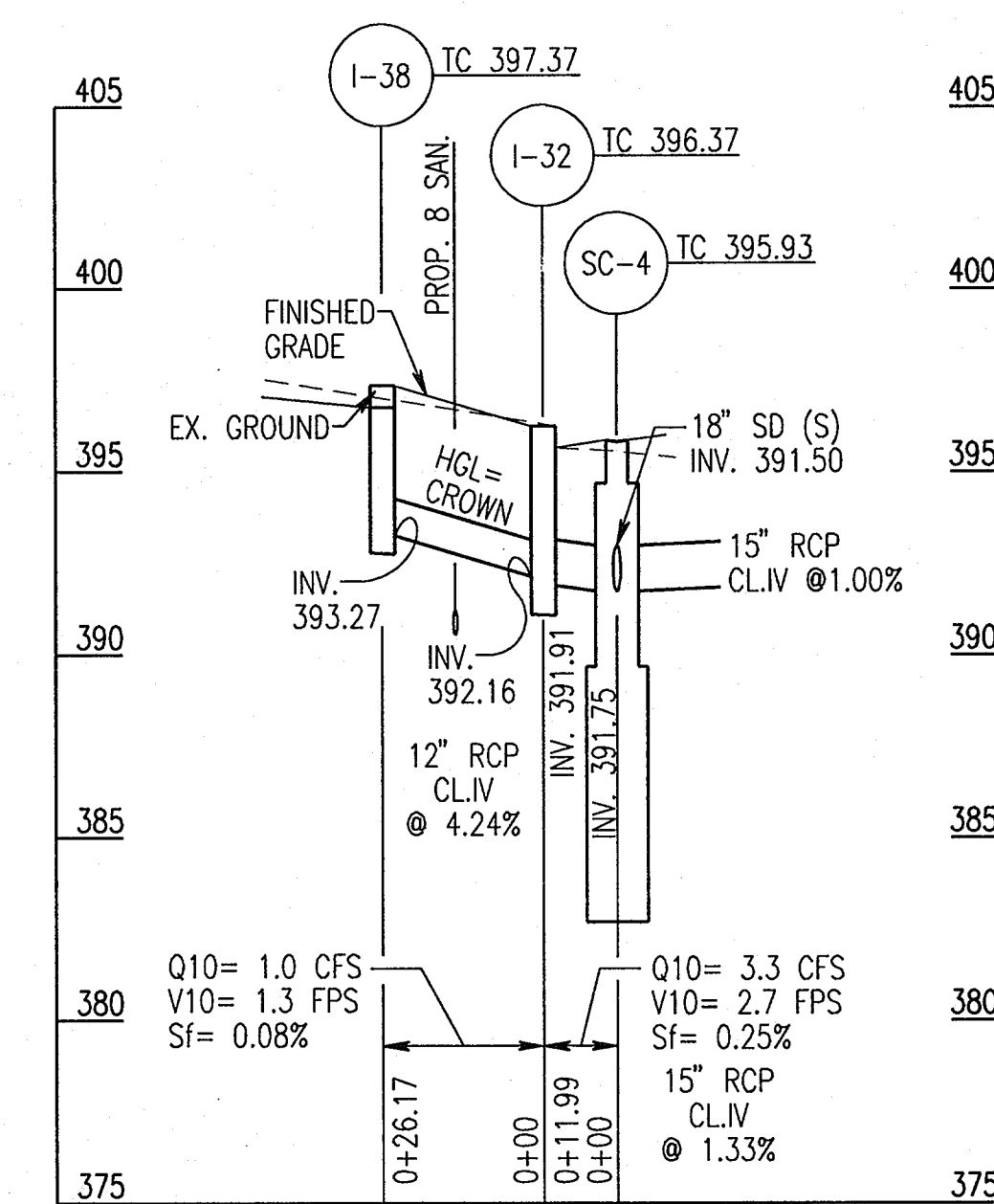
CENTER SERVICE ROAD STORM DRAIN: I-34 TO EXSD-4

SCALE: 1" = 30' HORIZ
1" = 5' VERT



CENTER SERVICE ROAD STORM DRAIN:
I-37 TO SD-14

SCALE: 1" = 30' HORIZ
1" = 5' VERT



CENTER SERVICE ROAD STORM DRAIN: I-38 TO SC-4

SCALE: 1" = 30' HORIZ
1" = 5' VERT

ADD RETAINING WALL SHEETS	WJS/JS
G BID SET	3/24/05

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LAUREL MARYLAND 20723-6099



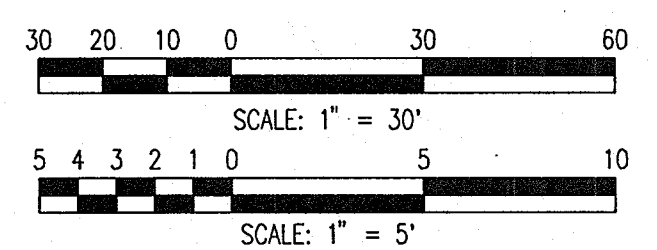
SYSTEMS INTEGRATION
BUILDINGS AND VAN PAD

SDP SET

JHU/APL INTERNAL USE

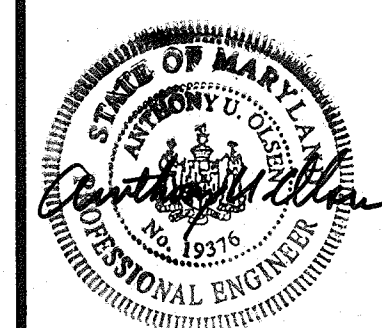
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GRAPHIC SCALES



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801 S. CAROLINE STREET
BALTIMORE, MARYLAND 21231
410 - 235 - 3450

STORM DRAIN PROFILES



DRAWING NO.

C206

Sheet 46 of 77

Scale: AS SHOWN

Designed By: R.B.C. Drawn By: C.J.K.

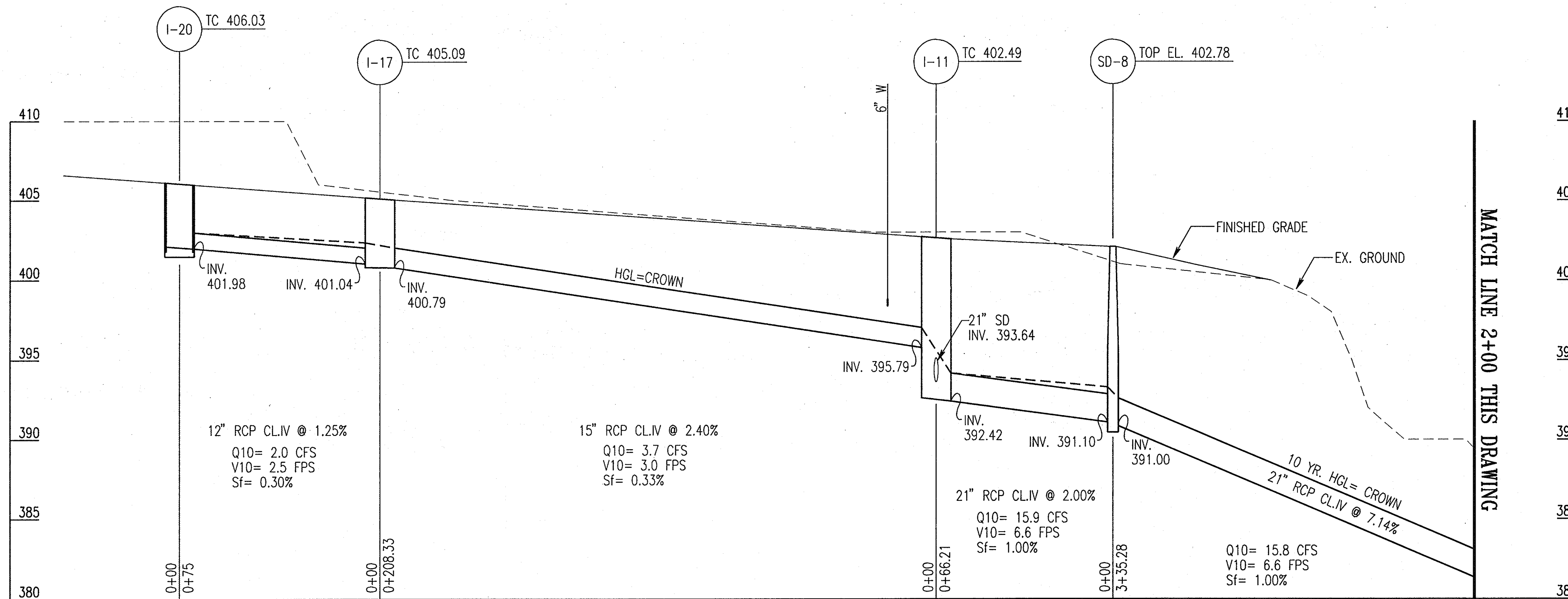
Checked By: A.U.O. Date: 03/25/05

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 4/20/05

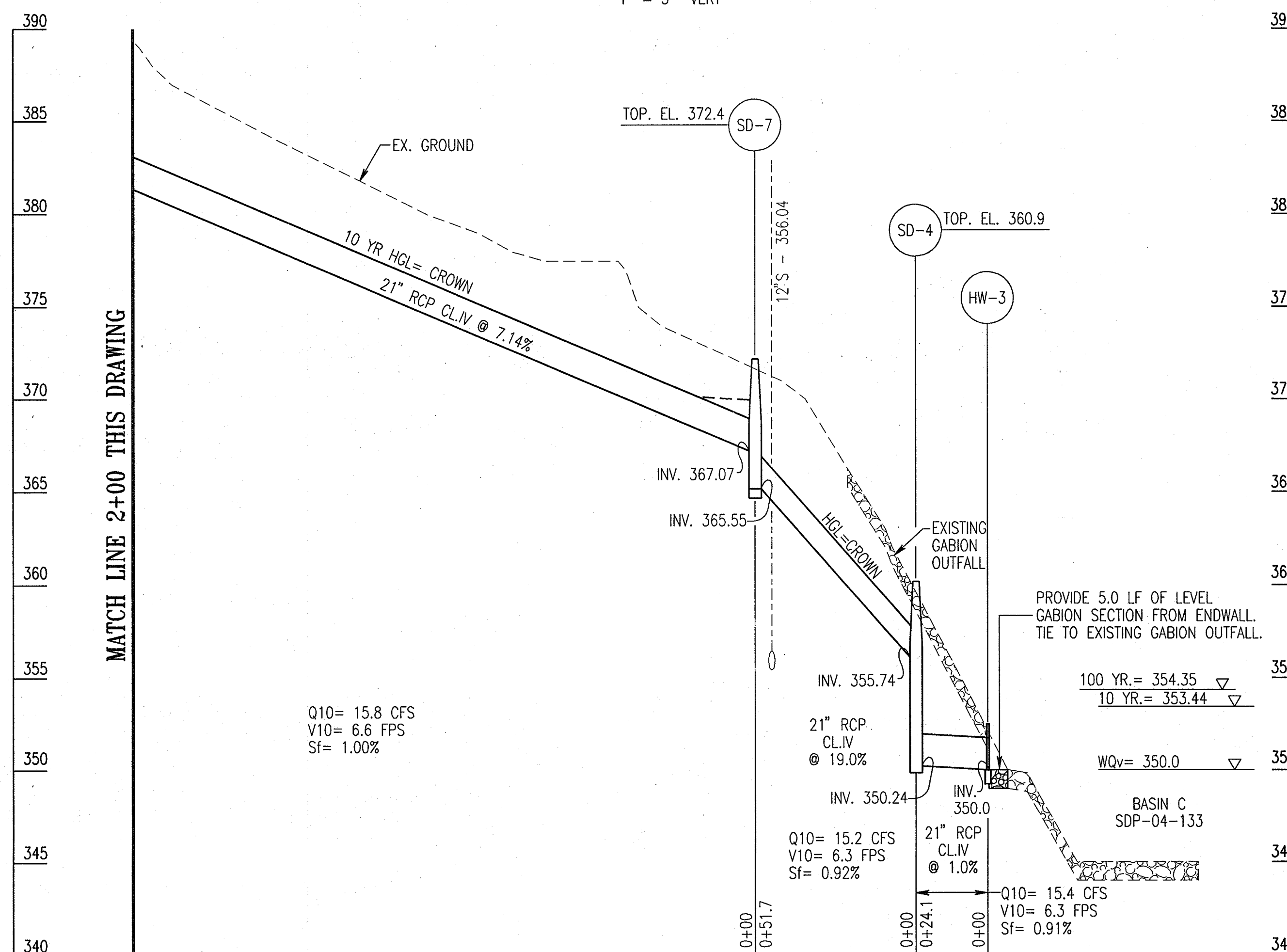
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 4/23/05

 DIRECTOR
 DATE: 4/24/05



NORTH ROAD STORM DRAIN TO BASIN C: I-20 TO HW-3

SCALE: 1" = 30' HORIZ
1" = 5' VERT



NORTH ROAD STORM DRAIN TO BASIN C: I-20 TO HW-3

SCALE: 1" = 30' HORIZ
1" = 5' VERT

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 [Signature] 4/20/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE
 [Signature] 4/22/05
 CHIEF, DIVISION OF LAND DEVELOPMENT DP DATE
 [Signature] 4/22/05
 DIRECTOR DATE

ADD RETAINING WALL SHEETS	10/25/05
G BID SET	3/24/05

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 LAUREL MARYLAND 20723-6099



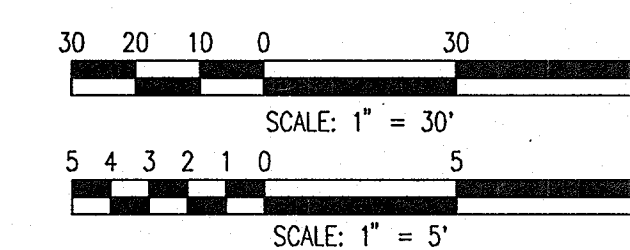
SYSTEMS INTEGRATION BUILDINGS AND VAN PAD

SDP SET

JHU/APL INTERNAL USE

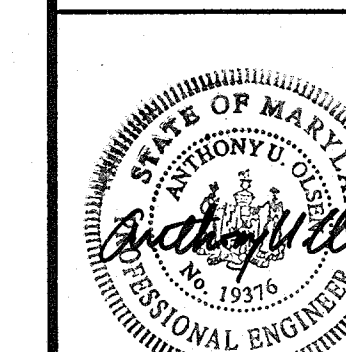
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GRAPHIC SCALES



WHITMAN, REQUARDT AND ASSOCIATES, LLP
 801 S. CAROLINE STREET
 BALTIMORE, MARYLAND 21231
 410 - 235 - 3450

STORM DRAIN PROFILES



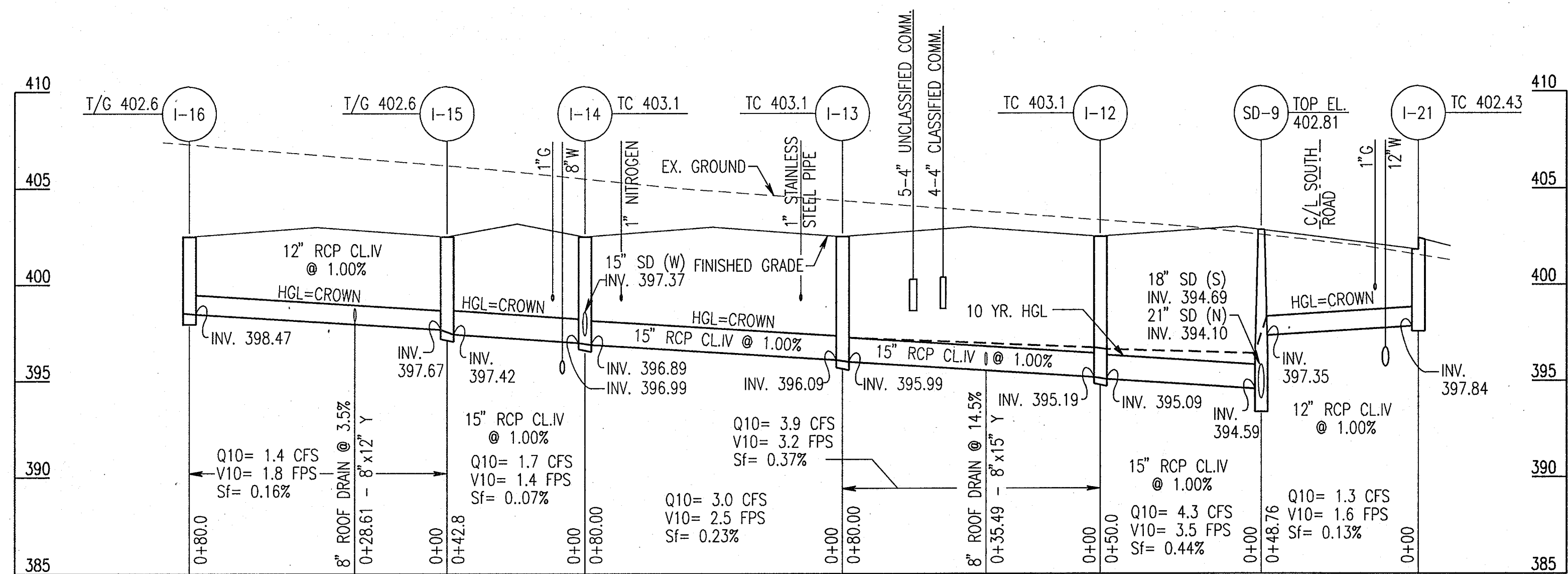
DRAWING NO.

C207

Sheet 47 of 77

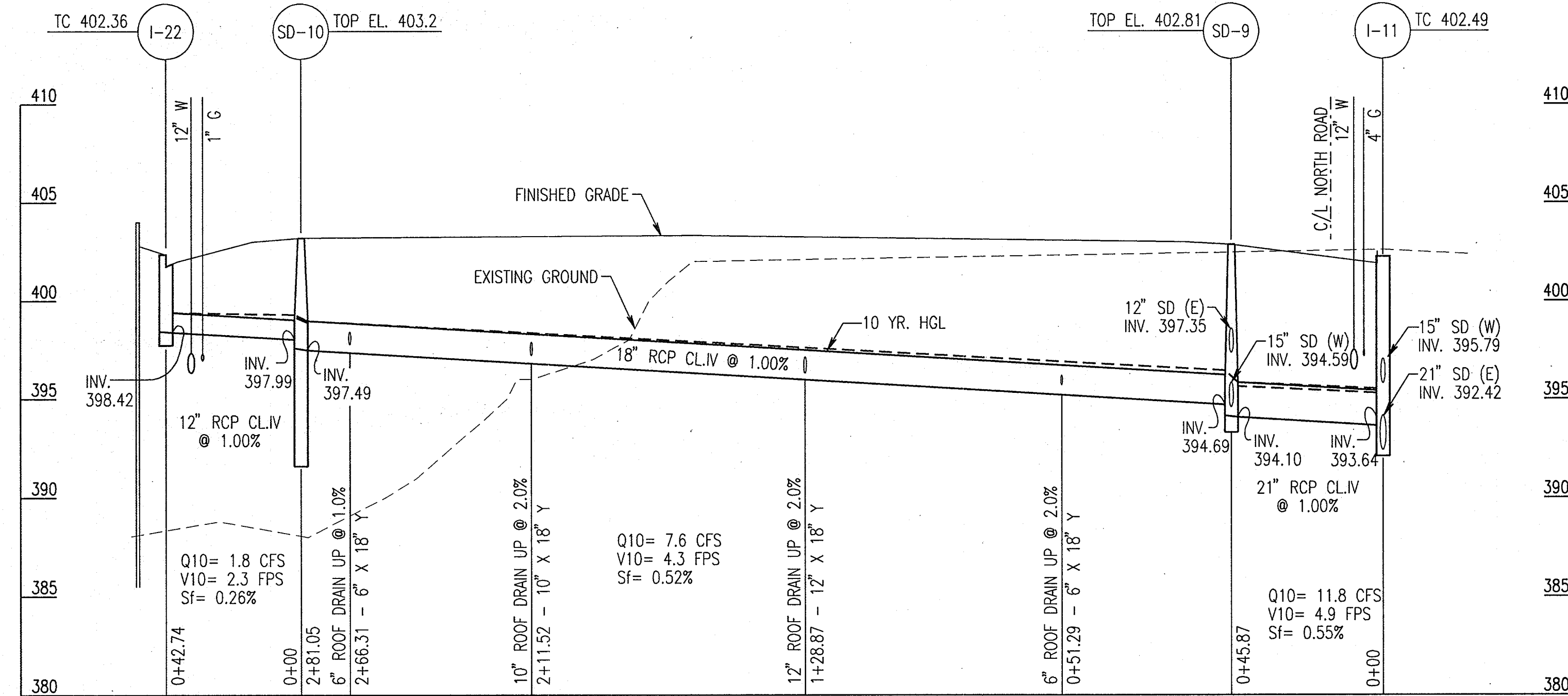
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 Designed By: R.B.C. Drawn By: C.J.K.
 Checked By: A.U.O. Date: 03/25/05

ADD RETAINING WALL SHEETS	10/25/05
G BID SET	3/24/05



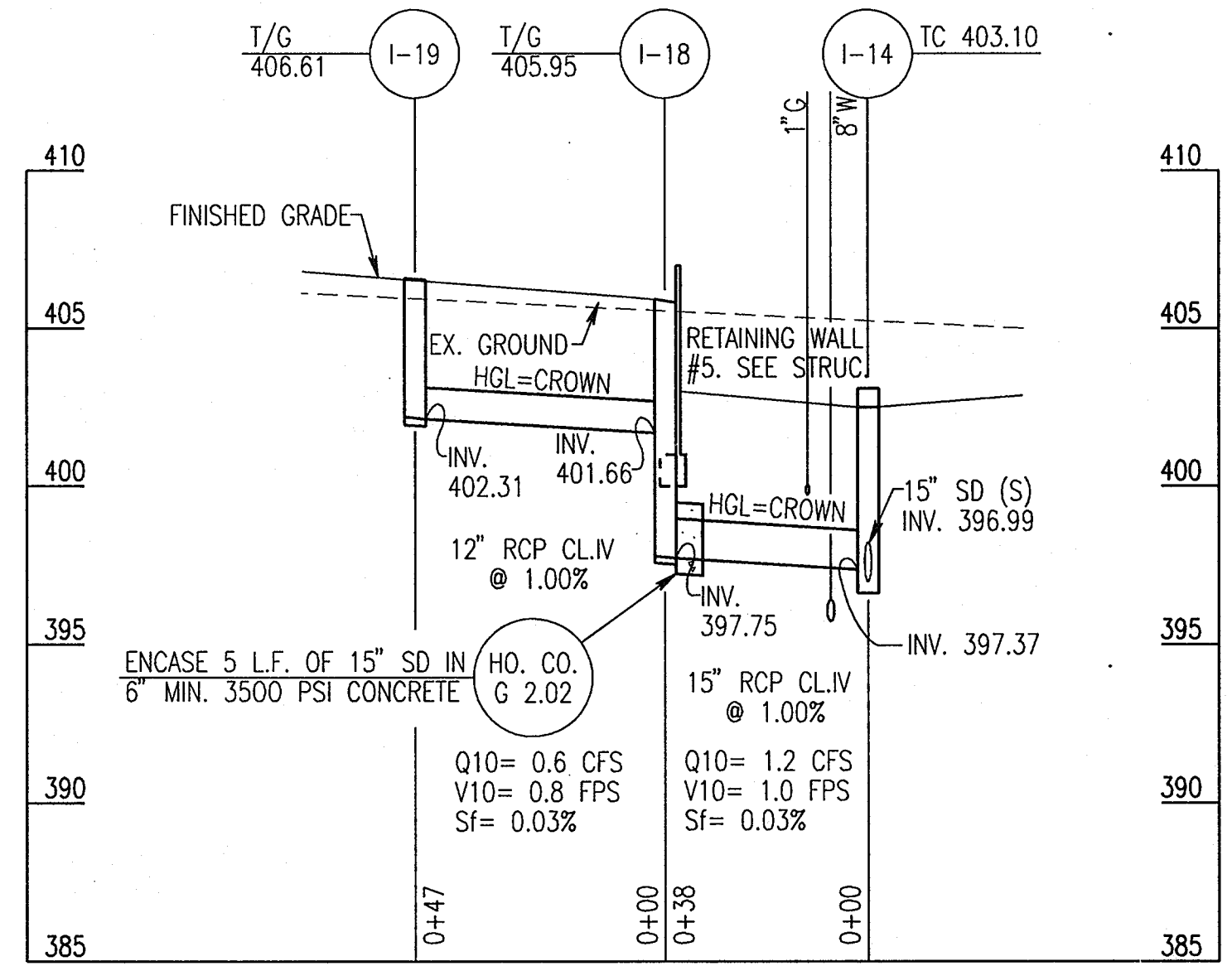
NORTH ROAD STORM DRAIN TO BASIN C: I-16 TO SD-9

SCALE: 1" = 30' HORIZ
1" = 5' VERT



NORTH ROAD STORM DRAIN TO BASIN C: I-22 TO I-11

SCALE: 1" = 30' HORIZ
1" = 5' VERT



NORTH ROAD STORM DRAIN TO BASIN C: I-19 TO I-14

SCALE: 1" = 30' HORIZ
1" = 5' VERT

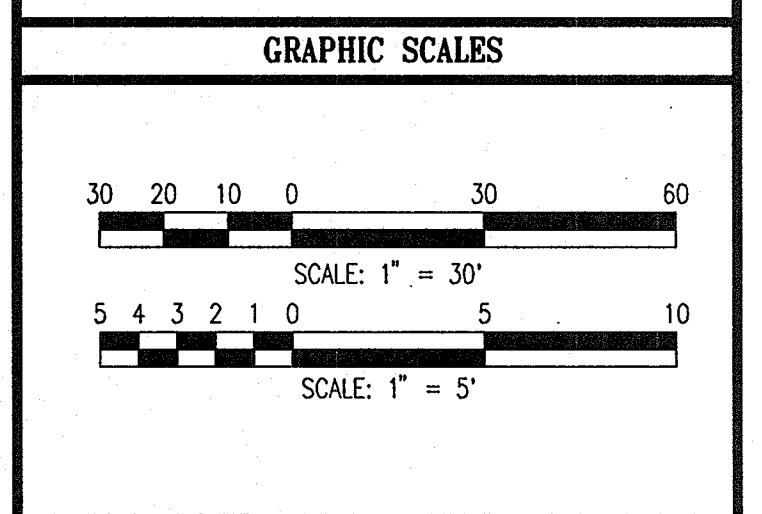
THE JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
JOHNS HOPKINS ROAD
LAUREL MARYLAND 20723-6099



SYSTEMS INTEGRATION BUILDINGS AND VAN PAD

SDP SET

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WHITMAN, REQUARDT AND ASSOCIATES, LLP
801 S. CAROLINE STREET
BALTIMORE, MARYLAND 21231
410 - 235 - 3450

STORM DRAIN PROFILES

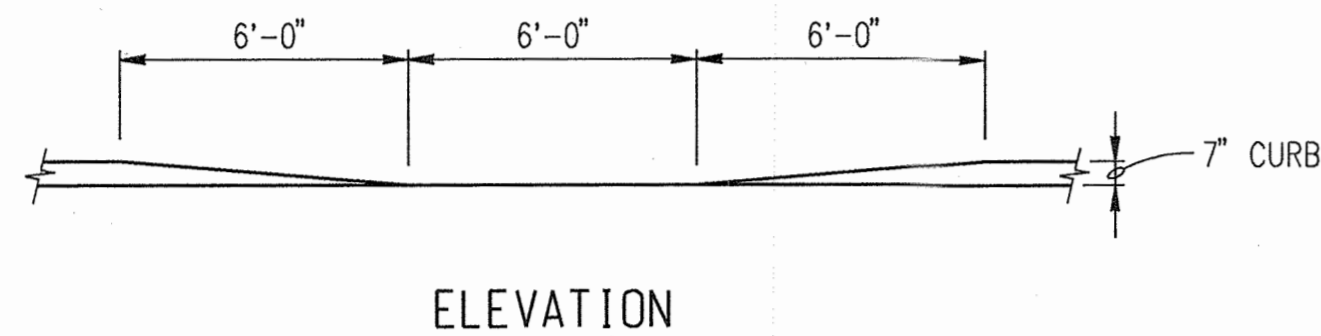
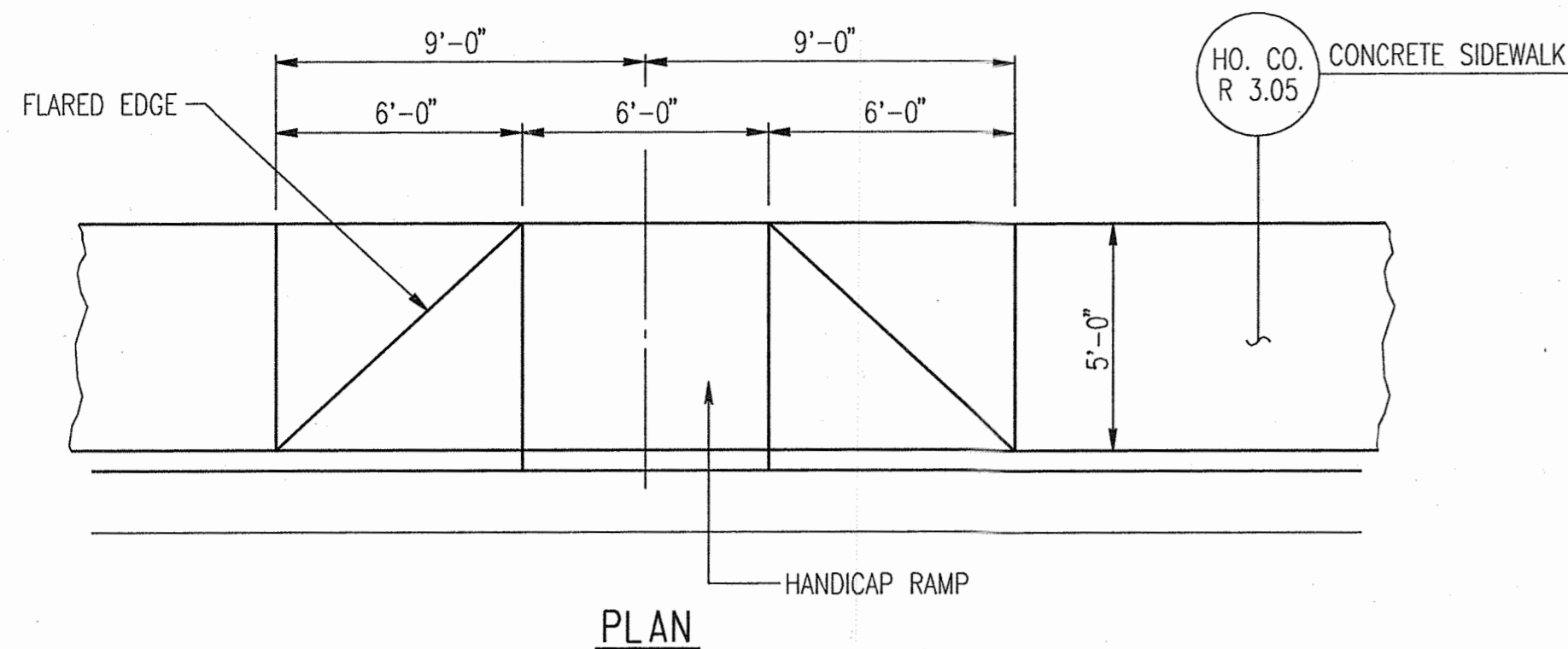
	DRAWING NO.
	C208
Sheet 48 of 77	
Scale: AS SHOWN	
Designed By: R.B.C.	Drawn By: C.J.K.
Checked By: A.U.O.	Date: 03/25/05

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

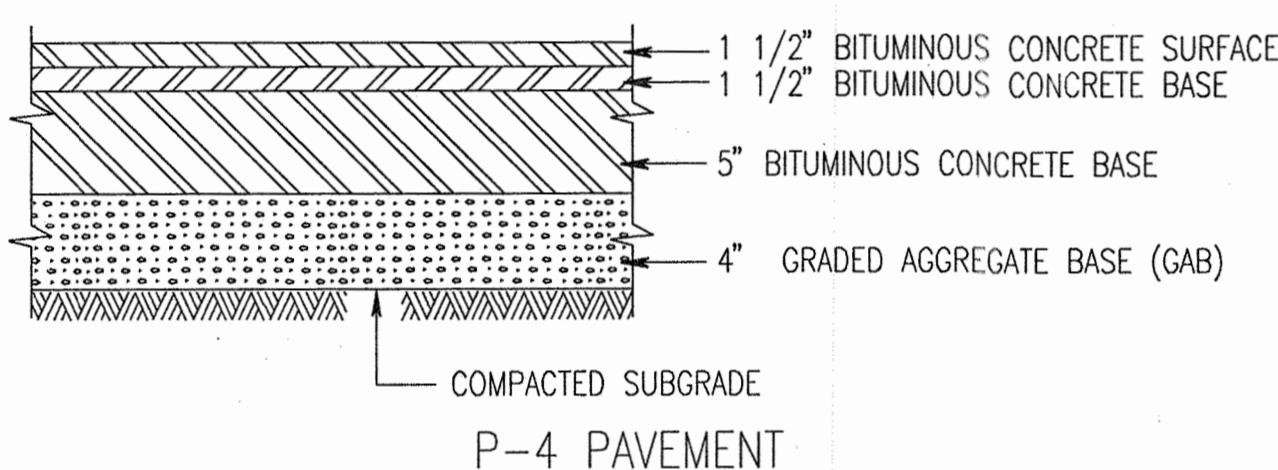
CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 4/20/05

CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 4/22/05

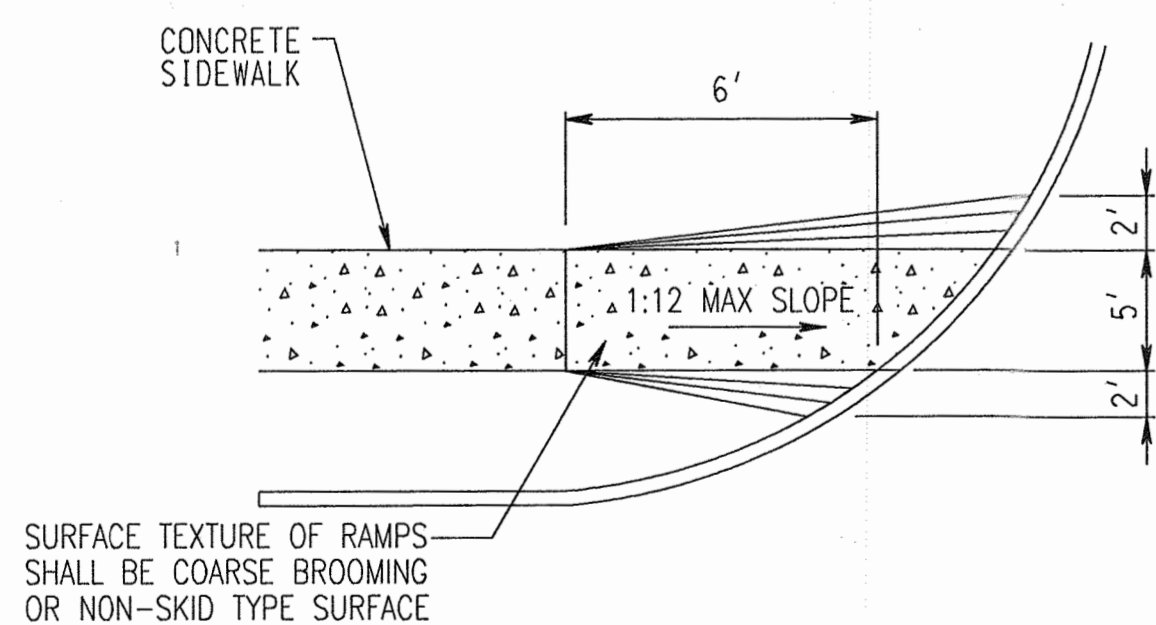
DIRECTOR
 DATE: 4/22/05



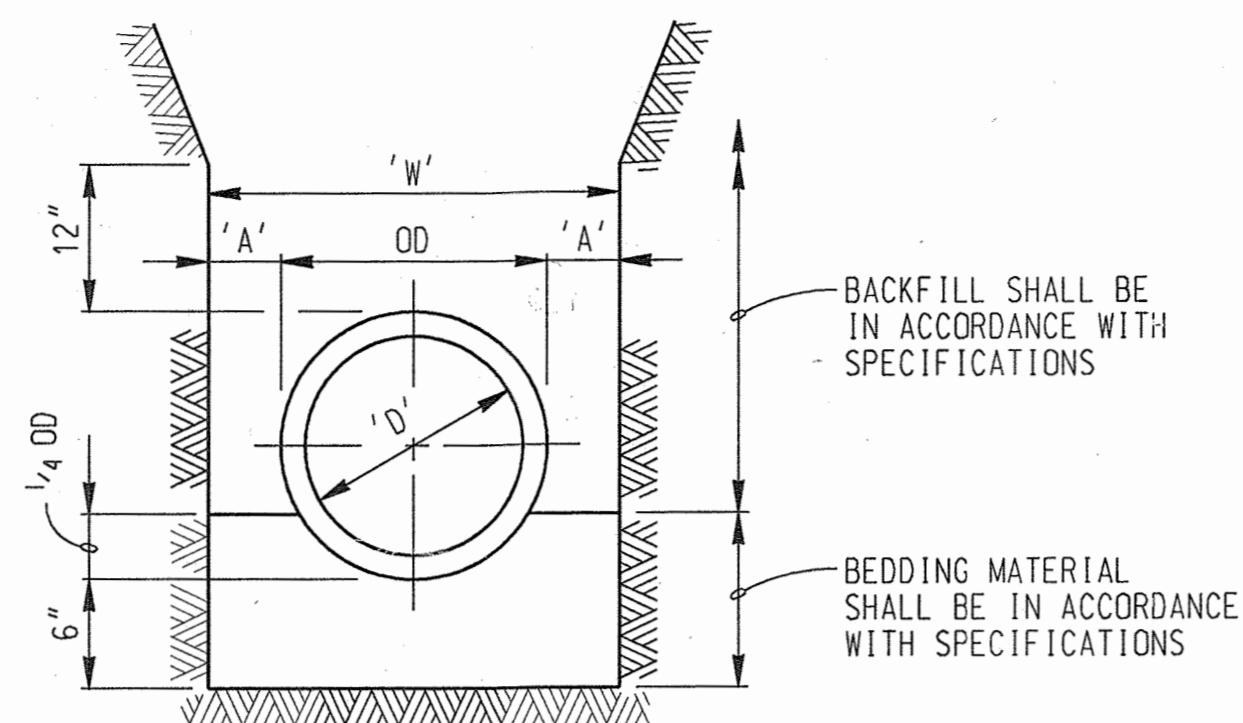
HANDICAP RAMP
SCALE: NTS



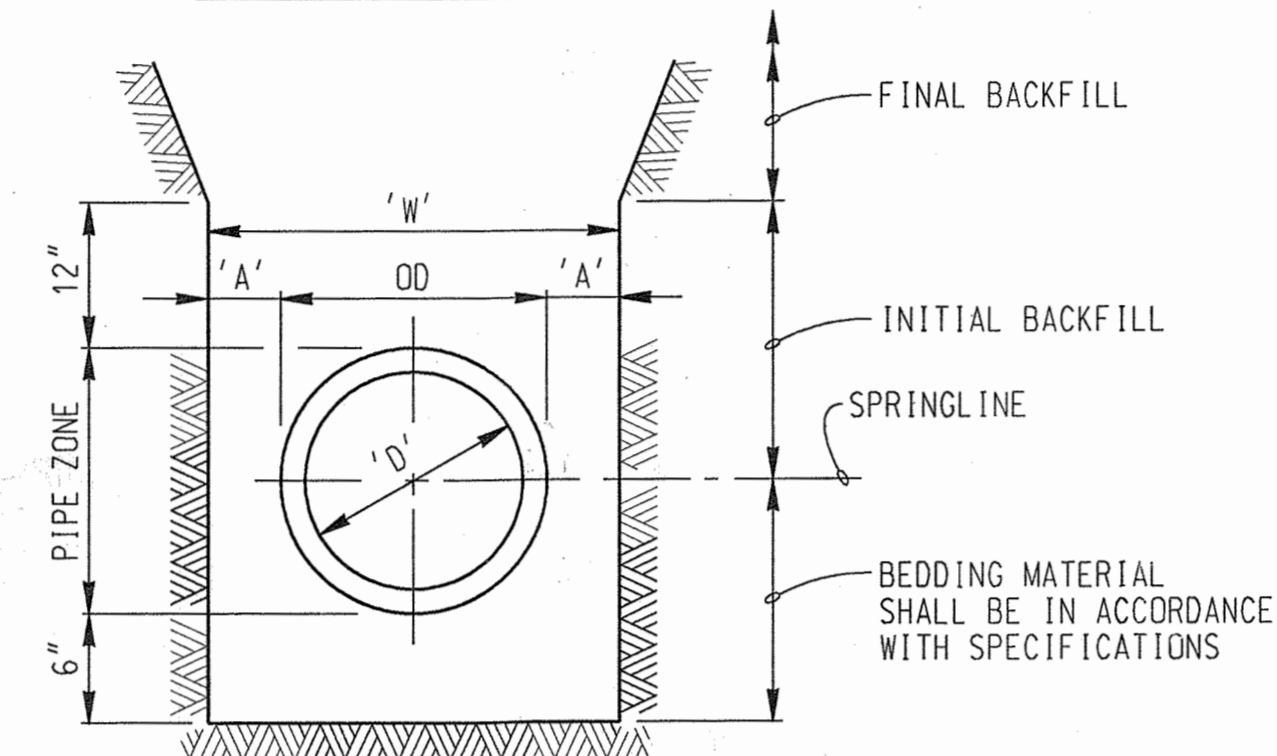
HOWARD COUNTY STANDARD PAVING DETAIL R-2.01
SCALE: N.T.S.



HANDICAP RAMP
SCALE: NTS



NON-PLASTIC PIPE

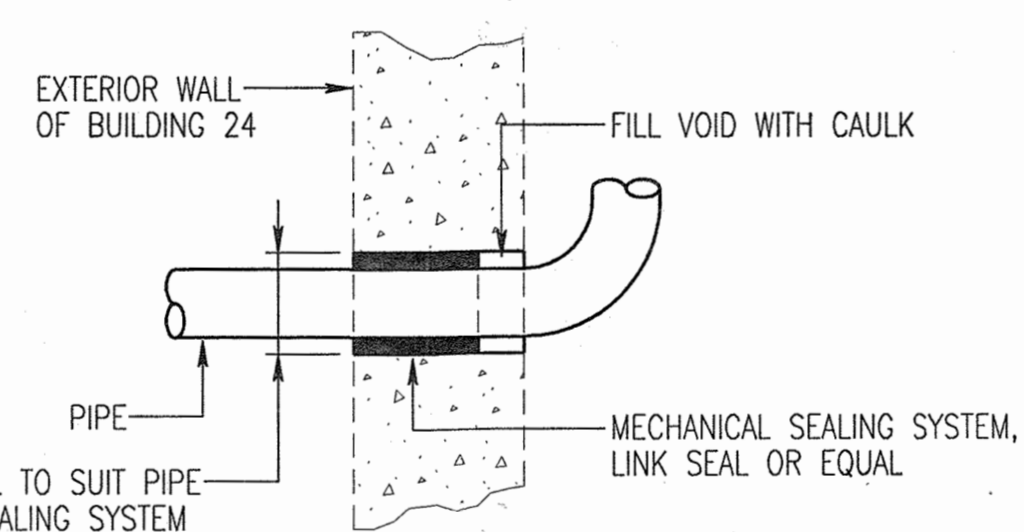


PLASTIC PIPE

PIPE DIAMETER 'D'	MAXIMUM 'A'
24" & UNDER	12"
OVER 24"	18"

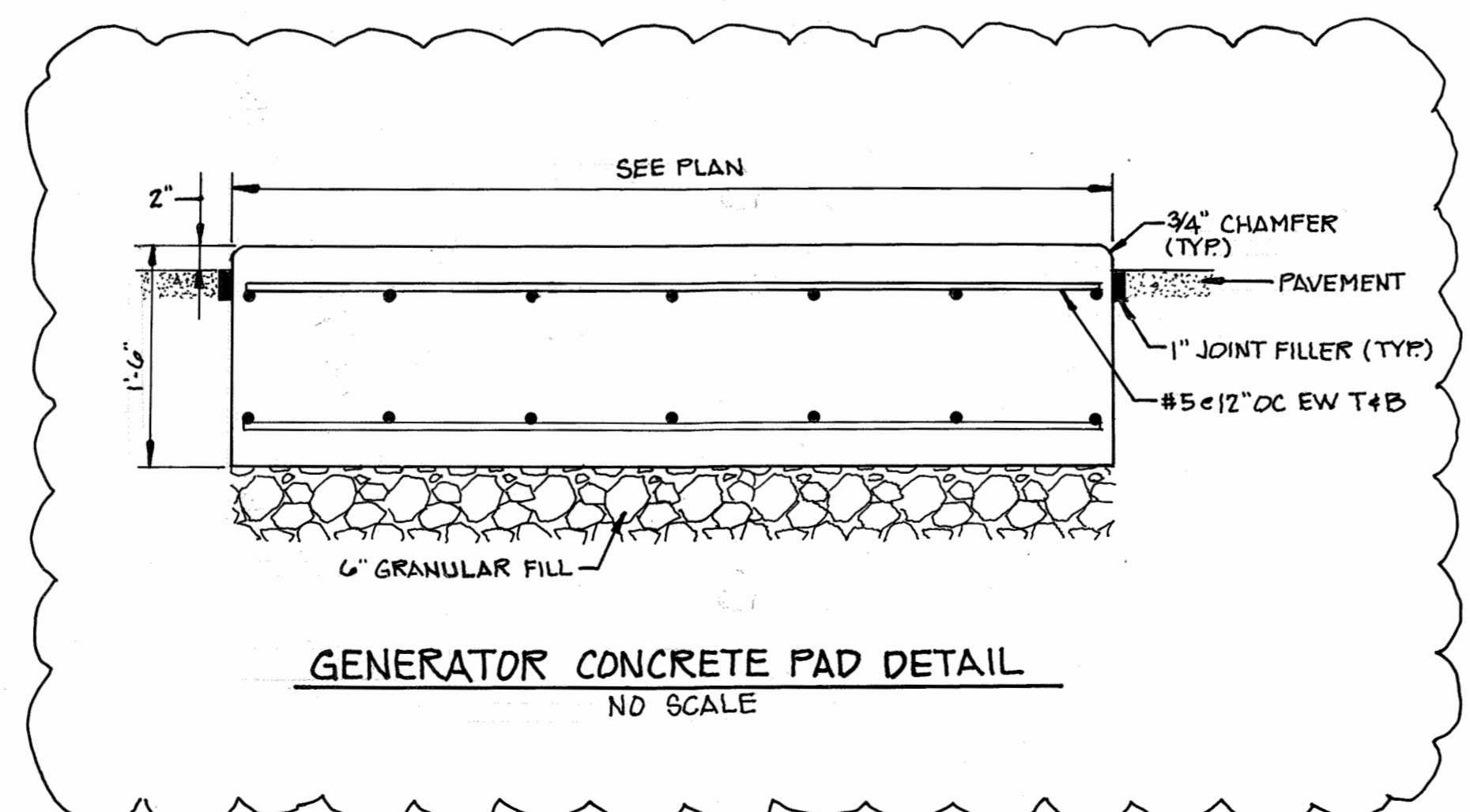
TRENCHING AND BEDDING

NOT TO SCALE

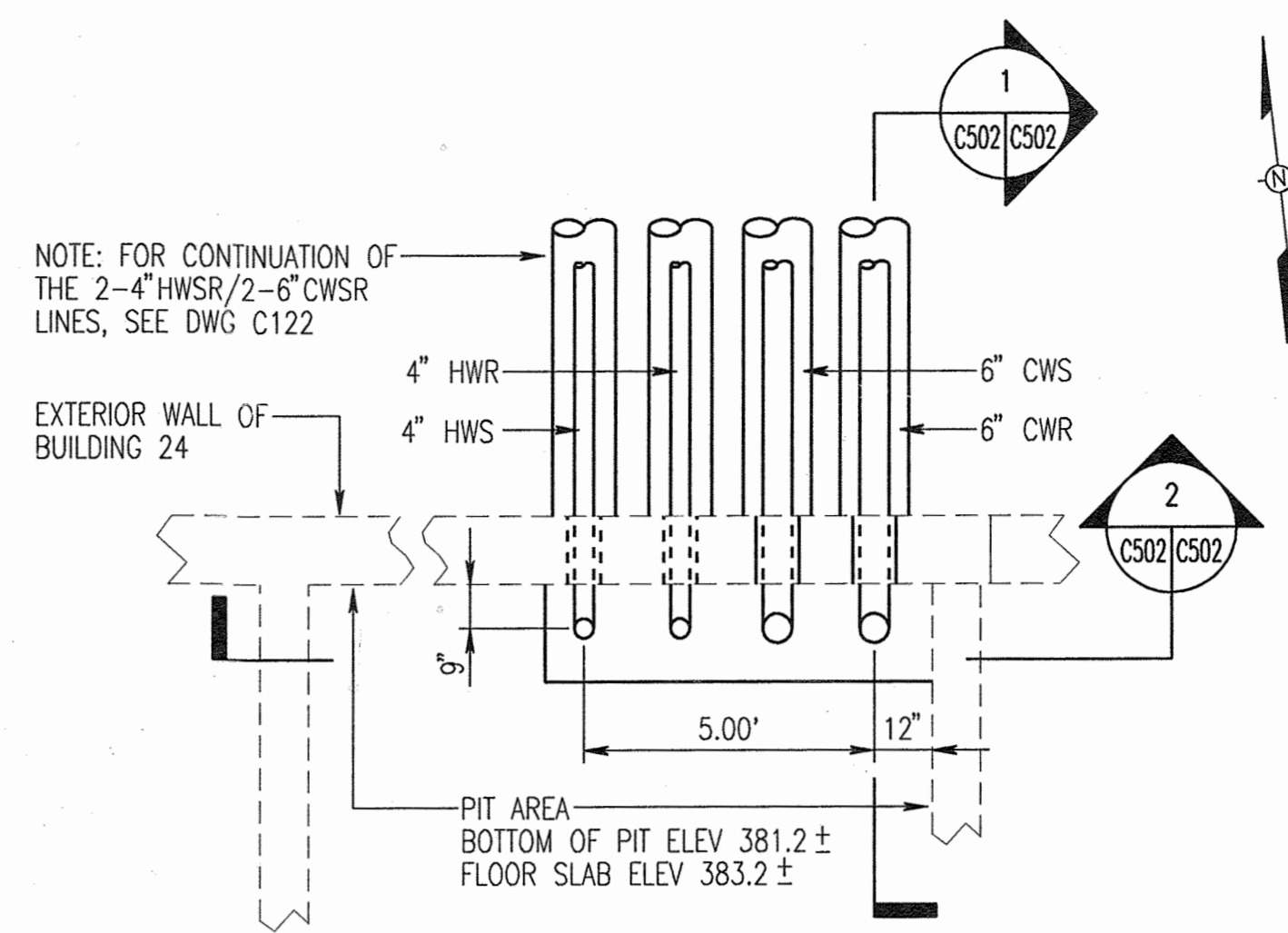


WALL PENETRATION

NOT TO SCALE

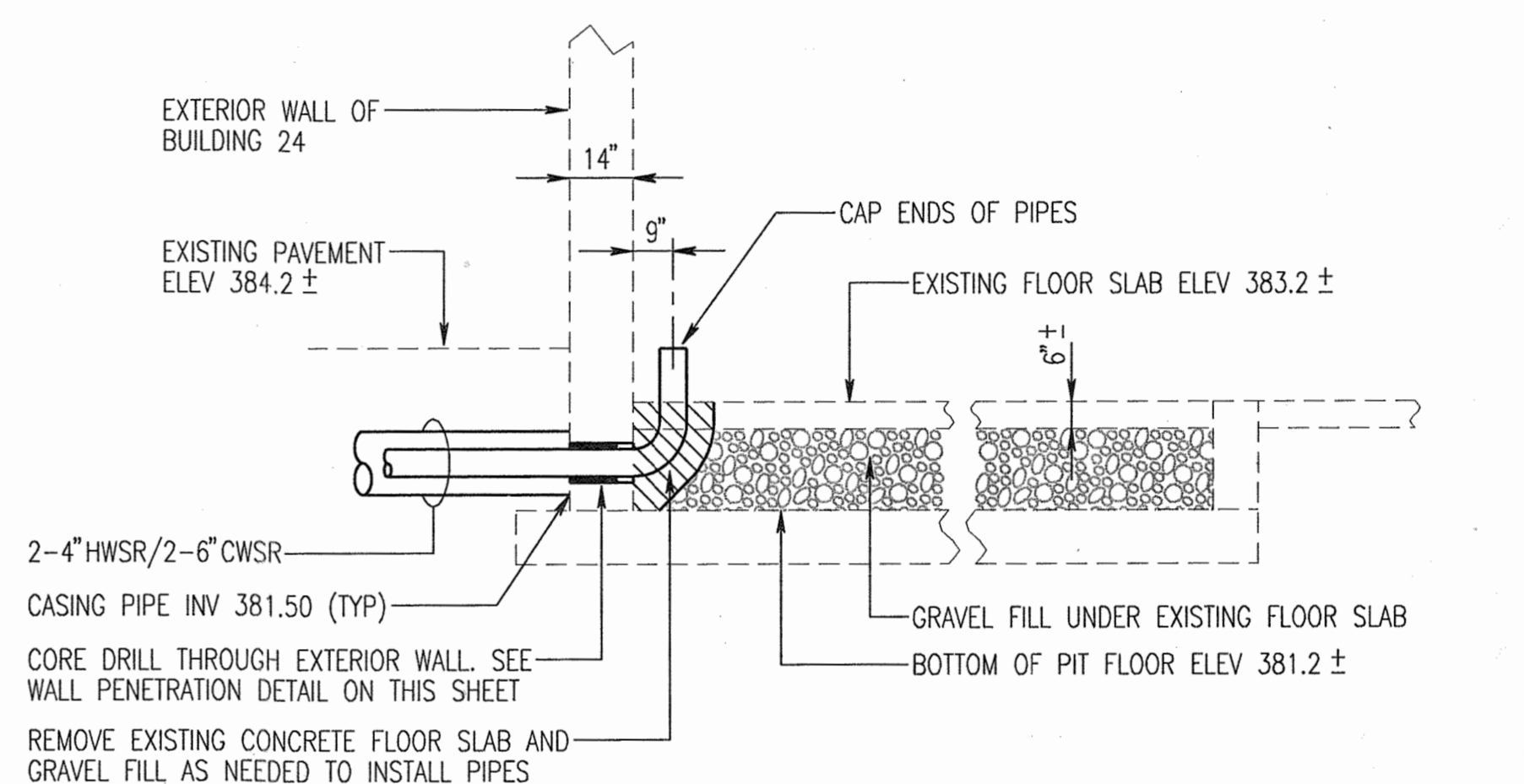


GENERATOR CONCRETE PAD DETAIL
NO SCALE



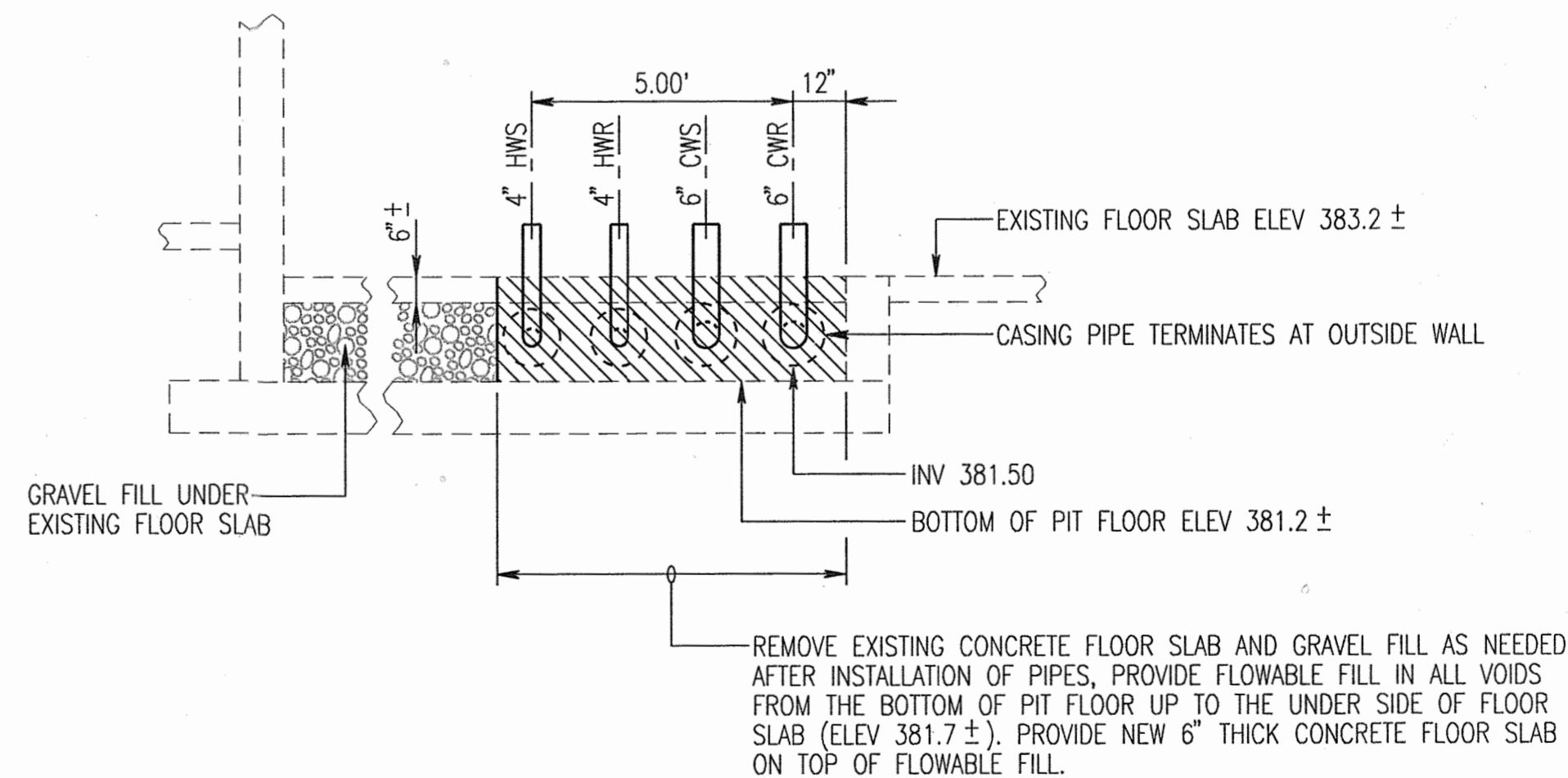
ENLARGED UTILITY PLAN AT BLDG 24

SCALE: NTS



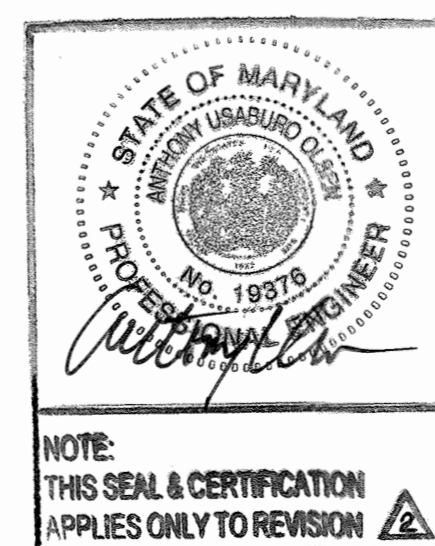
SECTION 1

SCALE: NTS



SECTION 2

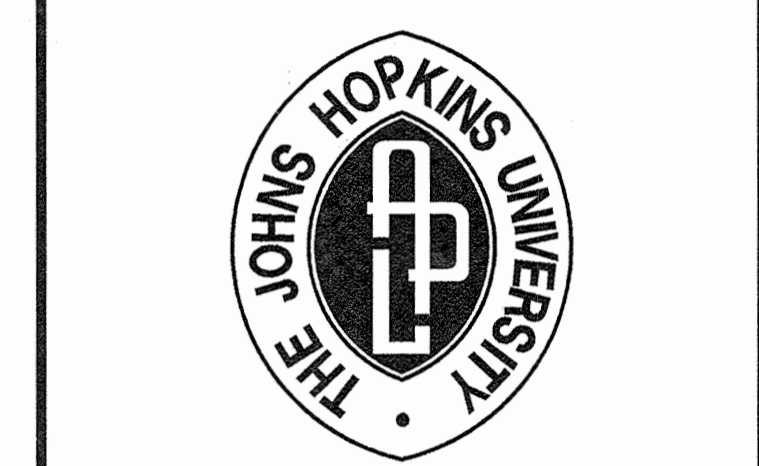
SCALE: NTS



PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 12376 EXPIRATION DATE: SEPTEMBER 22, 2021

ADD SLAB DETAIL	01/20
ADD RETAINING WALL SHEETS	10/25/05
G BID SET	3/24/05

THE JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
JOHNS HOPKINS ROAD
LAUREL MARYLAND 20723-6099



SYSTEMS INTEGRATION BUILDINGS AND VAN PAD

SDP SET

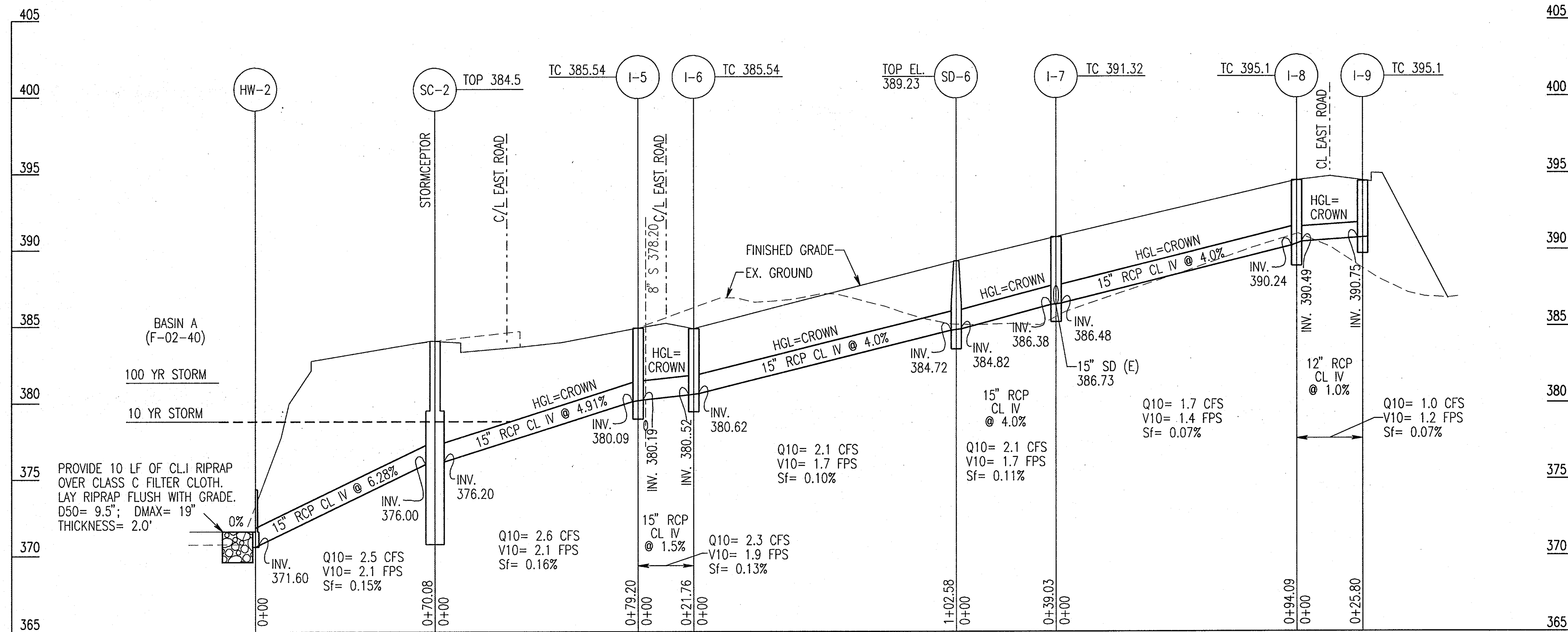
JHU/APL INTERNAL USE
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GRAPHIC SCALES

WR&A
WHITMAN, REQUARD AND ASSOCIATES, LLP
801 S. CAROLINE STREET
BALTIMORE, MARYLAND 21231
410 - 235 - 3450

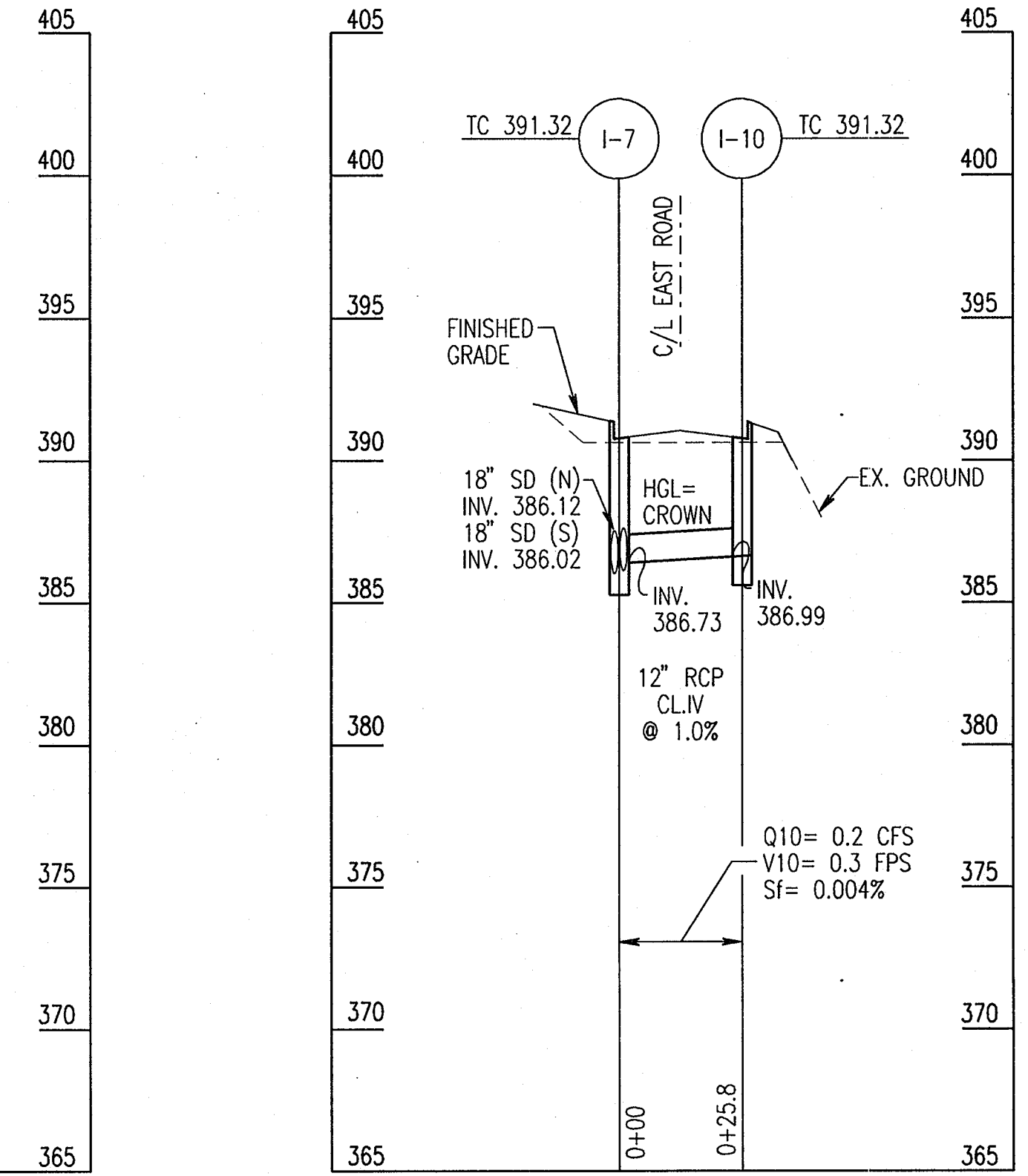
DETAILS	
DRAWING NO.	C502
Sheet 57 of 77	
Scale:	AS SHOWN
Designed By: R.B.C.	Drawn By: C.J.K.
Checked By: A.U.O.	Date: 03/25/05

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 [Signature] 4/20/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 [Signature] 4/22/05
 CHIEF, DIVISION OF LAND DEVELOPMENT
 [Signature] 4/22/05
 DIRECTOR



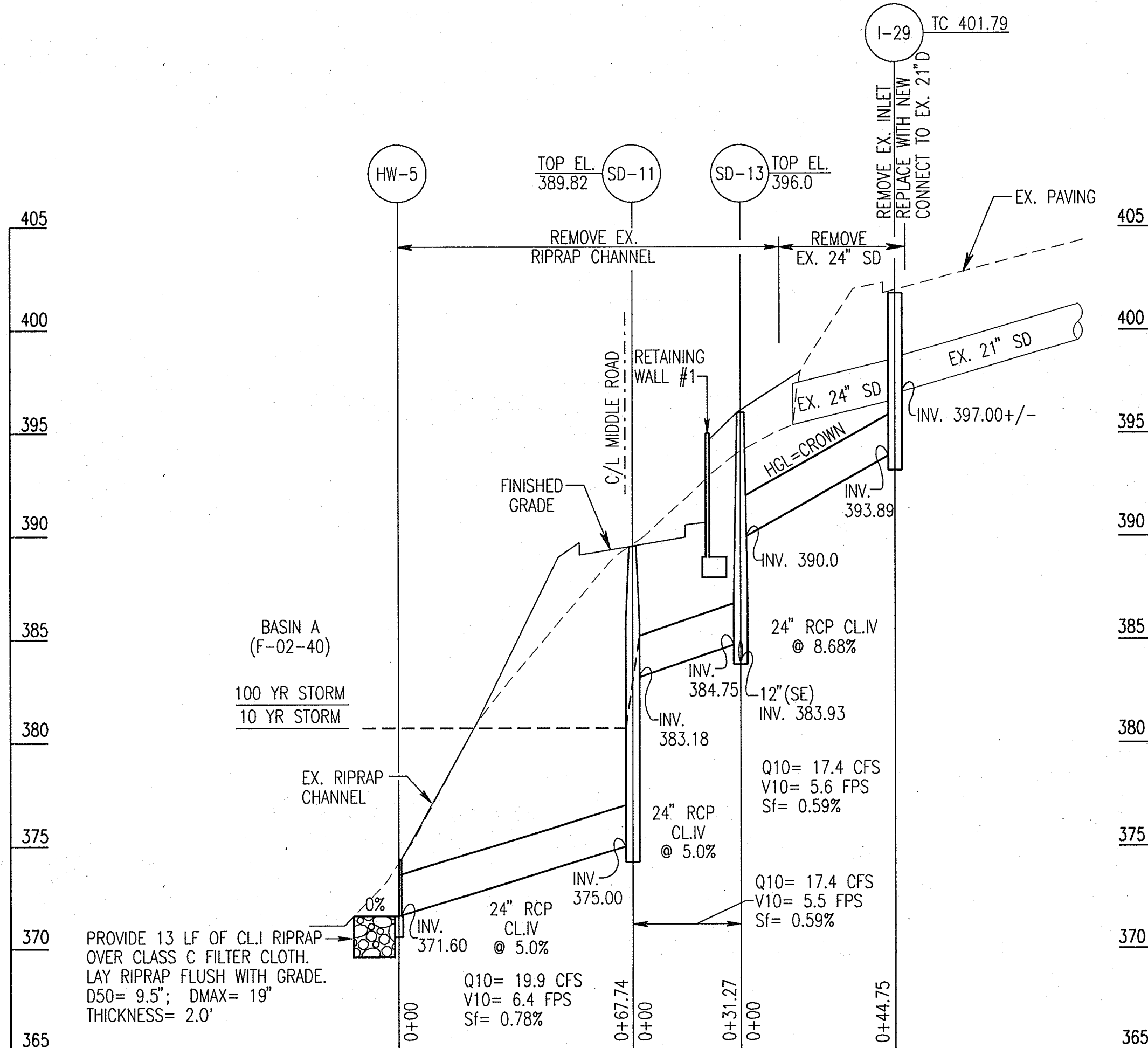
EAST ROAD STORM DRAIN: HW-2 TO I-9

SCALE: 1" = 30' HORIZ
1" = 5' VERT



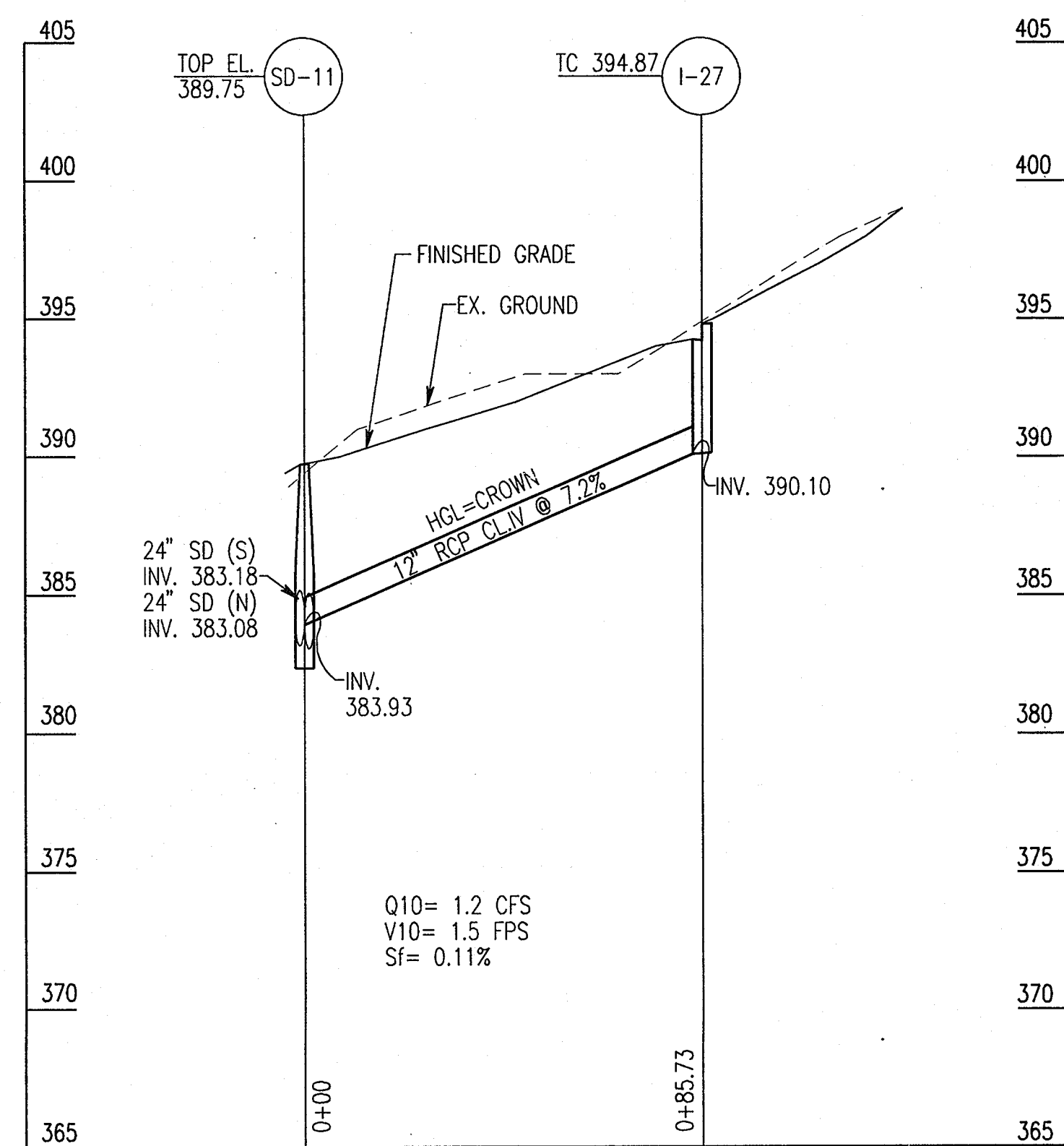
EAST ROAD STORM DRAIN: I-7 TO I-10

SCALE: 1" = 30' HORIZ
1" = 5' VERT



EX. EAST PARKING LOT STORM DRAIN: HW-5 TO I-29

SCALE: 1" = 30' HORIZ
1" = 5' VERT



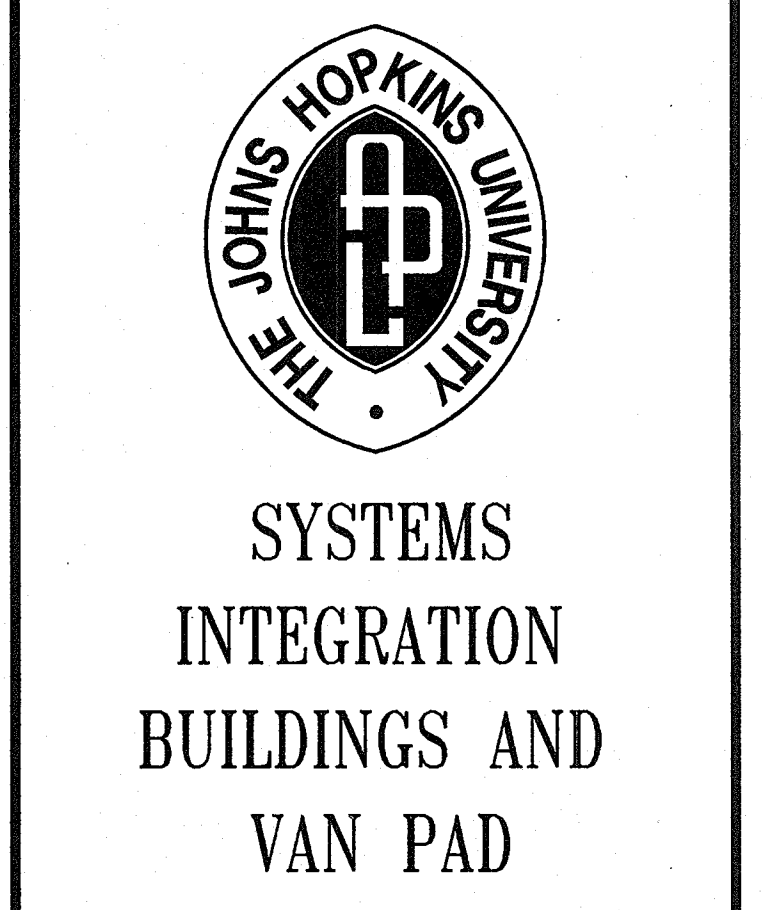
EAST ROAD PROFILE: SD-11 TO I-27

SCALE: 1" = 30' HORIZ
1" = 5' VERT

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 [Signature] 4/20/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 [Signature] 3/23/05
 CHIEF, DIVISION OF LAND DEVELOPMENT
 [Signature] 4/24/05
 DIRECTOR

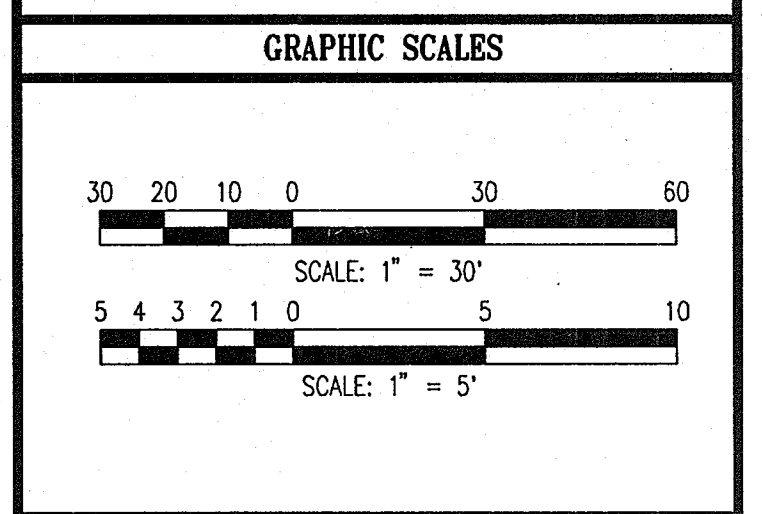
ADD RETAINING WALL SHEETS	3/25/05
C BID SET	3/24/05

THE JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
 JOHNS HOPKINS ROAD
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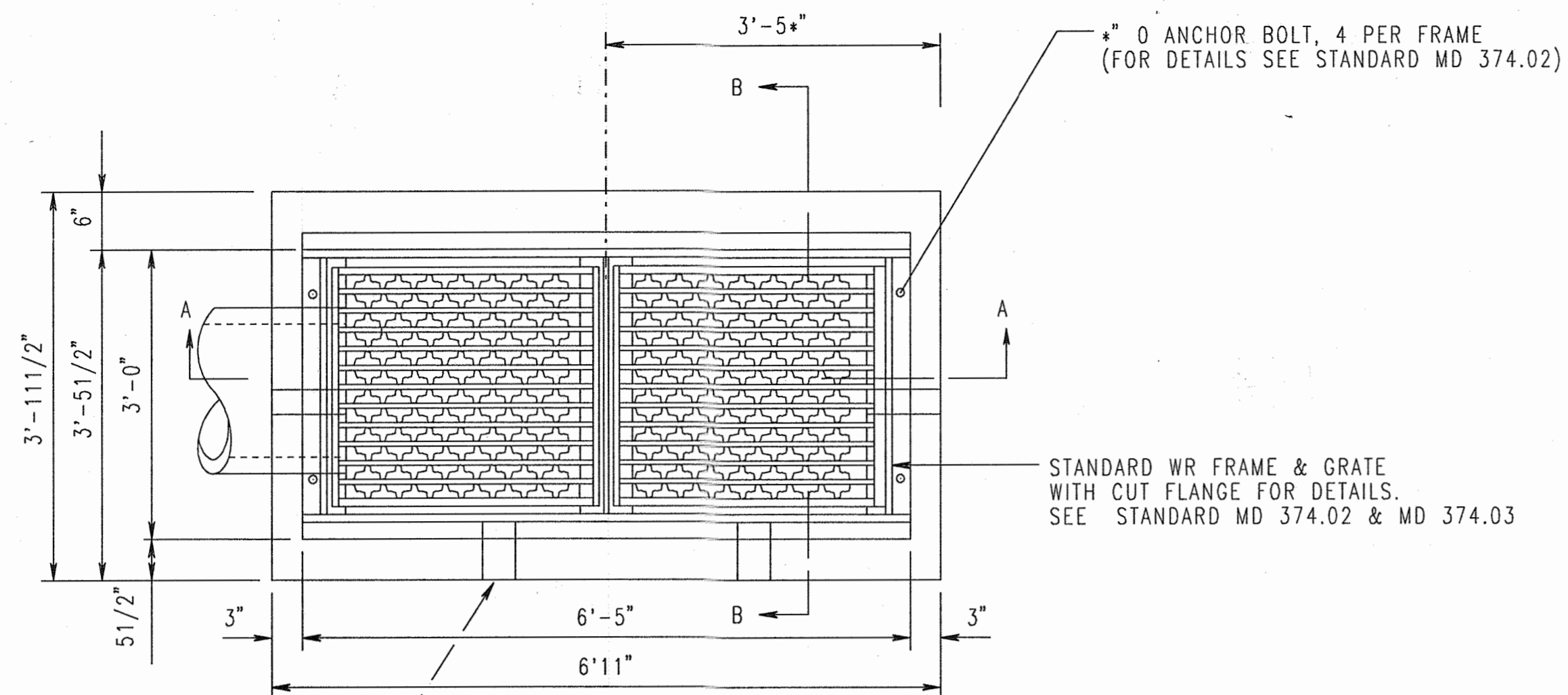
WR&A
 WHITMAN, REQUARDT AND ASSOCIATES, LLP
 801 S. CAROLINE STREET
 BALTIMORE, MARYLAND 21231
 410 - 235 - 3450

STORM DRAIN PROFILES

DRAWING NO. **C209**

Sheet 49 of 77

Scale: AS SHOWN
 Designed By: R.B.C. Drawn By: C.J.K.
 Checked By: A.U.O. Date: 03/25/05



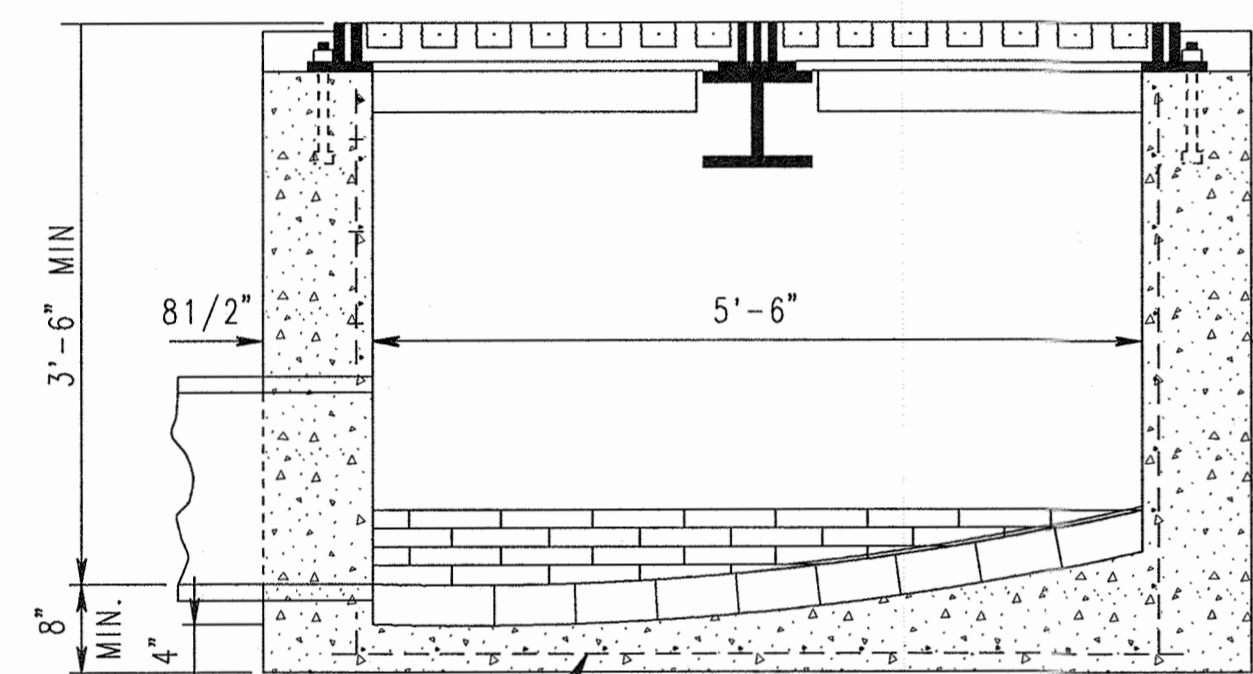
PLAN

LEAVE 4" x 4" OPENINGS FOR SUBGRADE DRAINAGE IF DIRECTED

STANDARD WR FRAME & GRATE WITH CUT FLANGE FOR DETAILS. SEE STANDARD MD 374.02 & MD 374.03

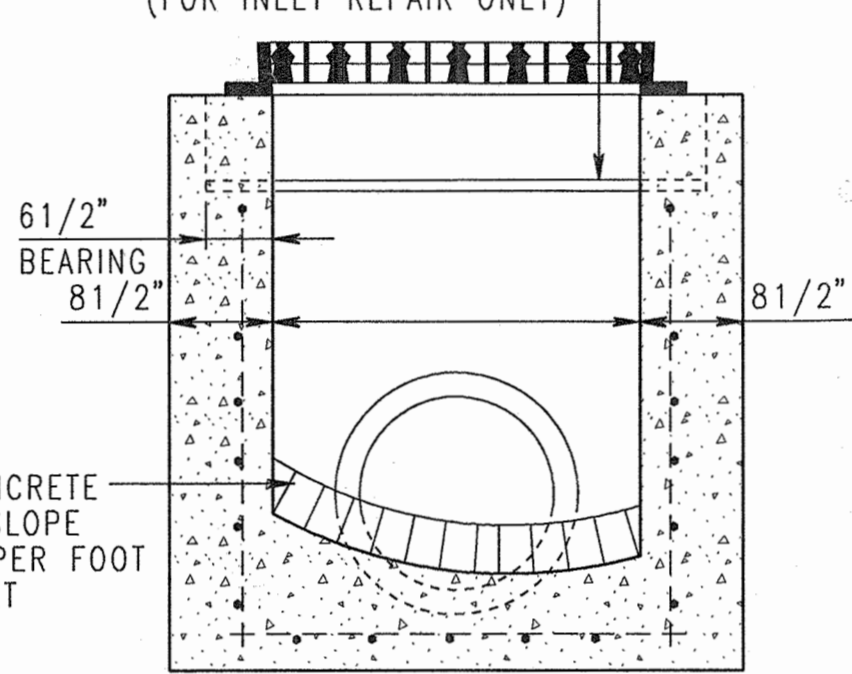
PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 123374, EXPIRATION DATE: SEPTEMBER 22, 2021.

W8x31 (GALVANIZED) SUPPORT BEAM 4'-6" LONG FOR DETAILS SEE STD. MD 374.03 FOR METHOD OF ANCHORING SUPPORT BEAM IF INLET IS CONSTRUCTED OF BRICK SEE STD. MD 374.05 (FOR INLET REPAIR ONLY)



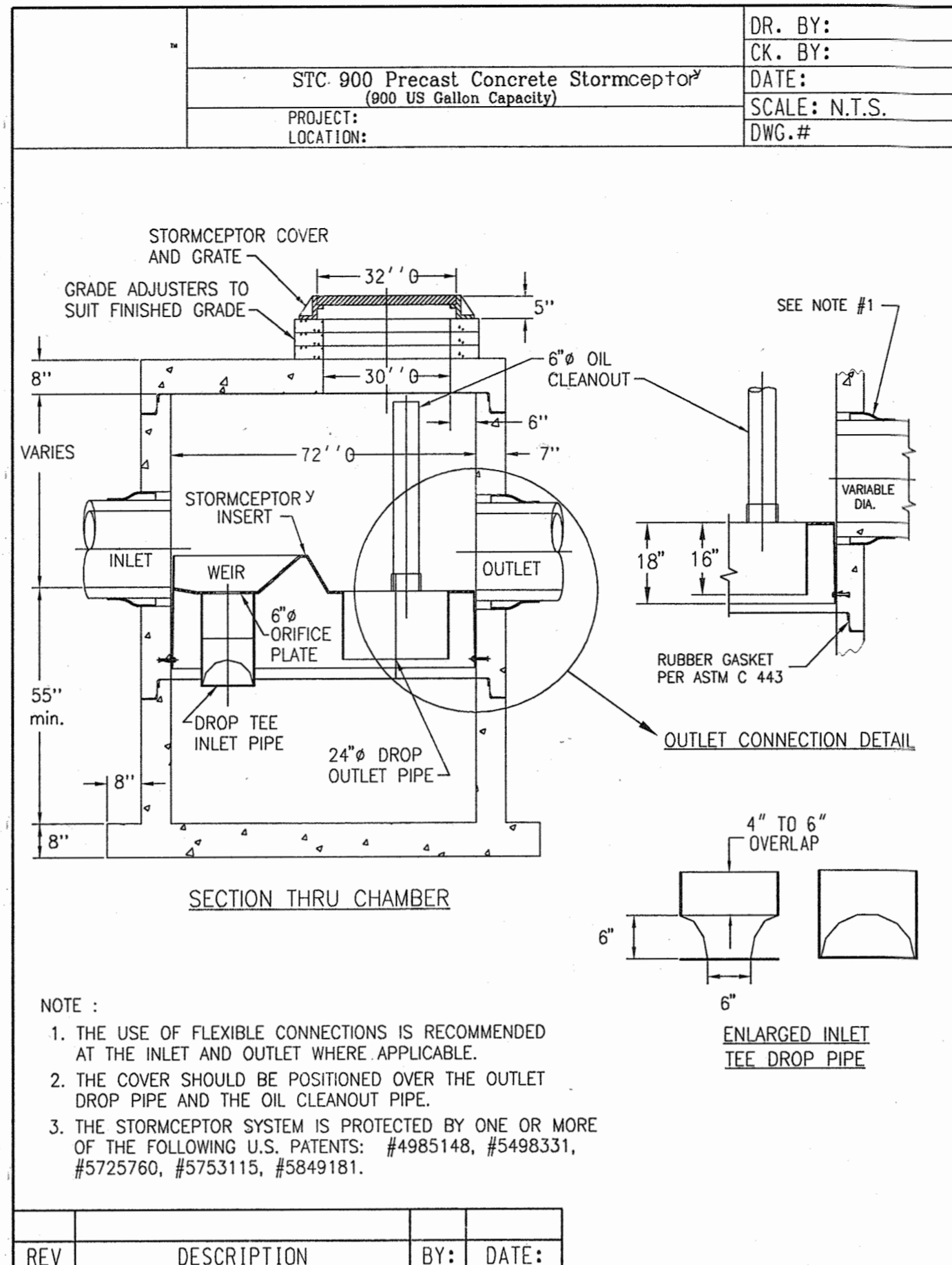
SECTION A-A

REINFORCEMENT: NO. 4 DEFORMED BARS @ 6" C/C 2 WAYS 2" COVER



SECTION B-B

BRICK OR CONCRETE CHANNEL TO SLOPE AT LEAST 2" PER FOOT TOWARD OUTLET

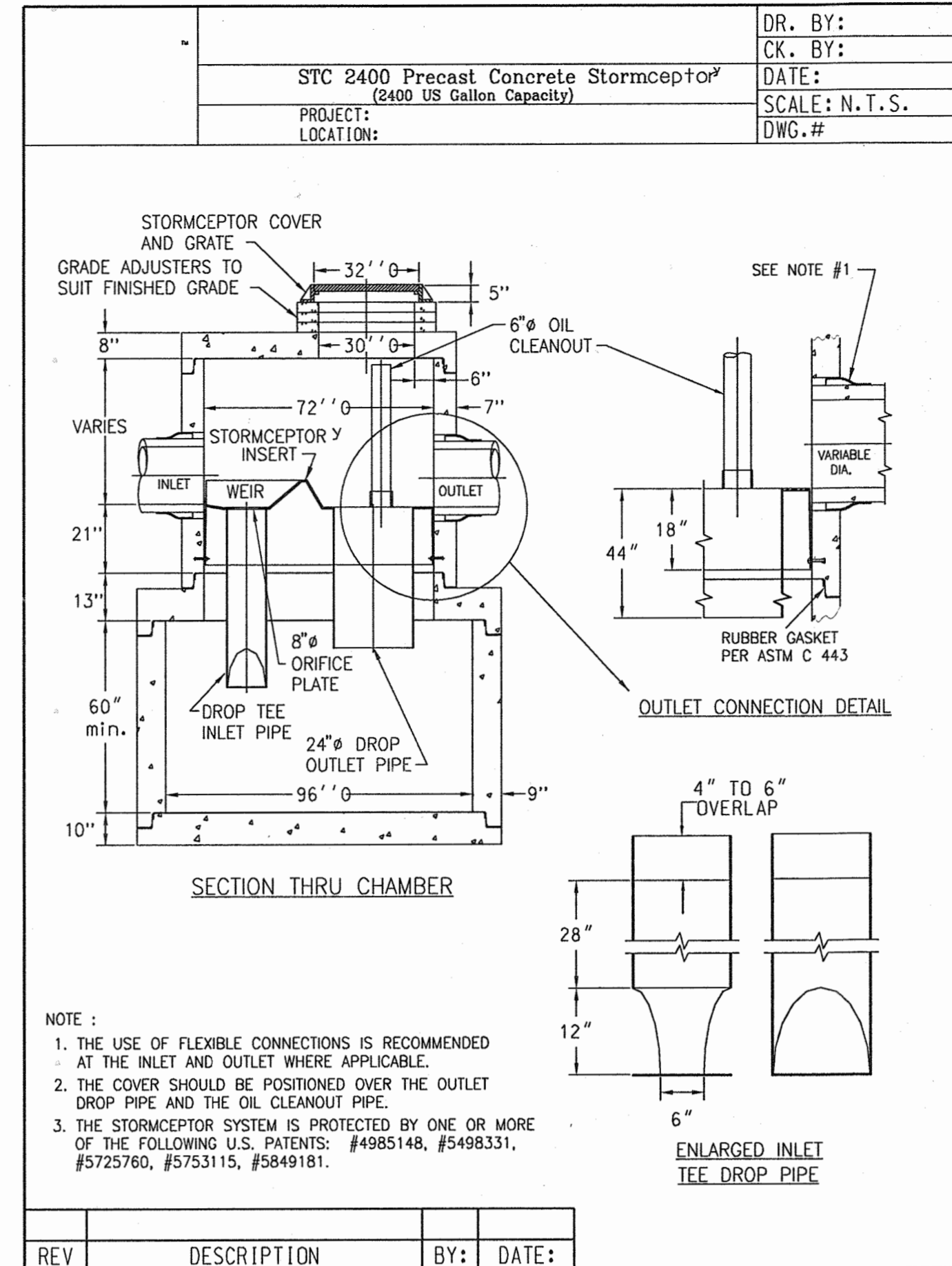


- NOTE:
1. THE USE OF FLEXIBLE CONNECTIONS IS RECOMMENDED AT THE INLET AND OUTLET WHERE APPLICABLE.
 2. THE COVER SHOULD BE POSITIONED OVER THE OUTLET DROP PIPE AND THE OIL CLEANOUT PIPE.
 3. THE STORMCEPTOR SYSTEM IS PROTECTED BY ONE OR MORE OF THE FOLLOWING U.S. PATENTS: #4985148, #5498331, #5725760, #5753115, #5849181.

SC-2/SC-3 STORMCEPTOR DETAILS

NOT TO SCALE

C123 C116 C501

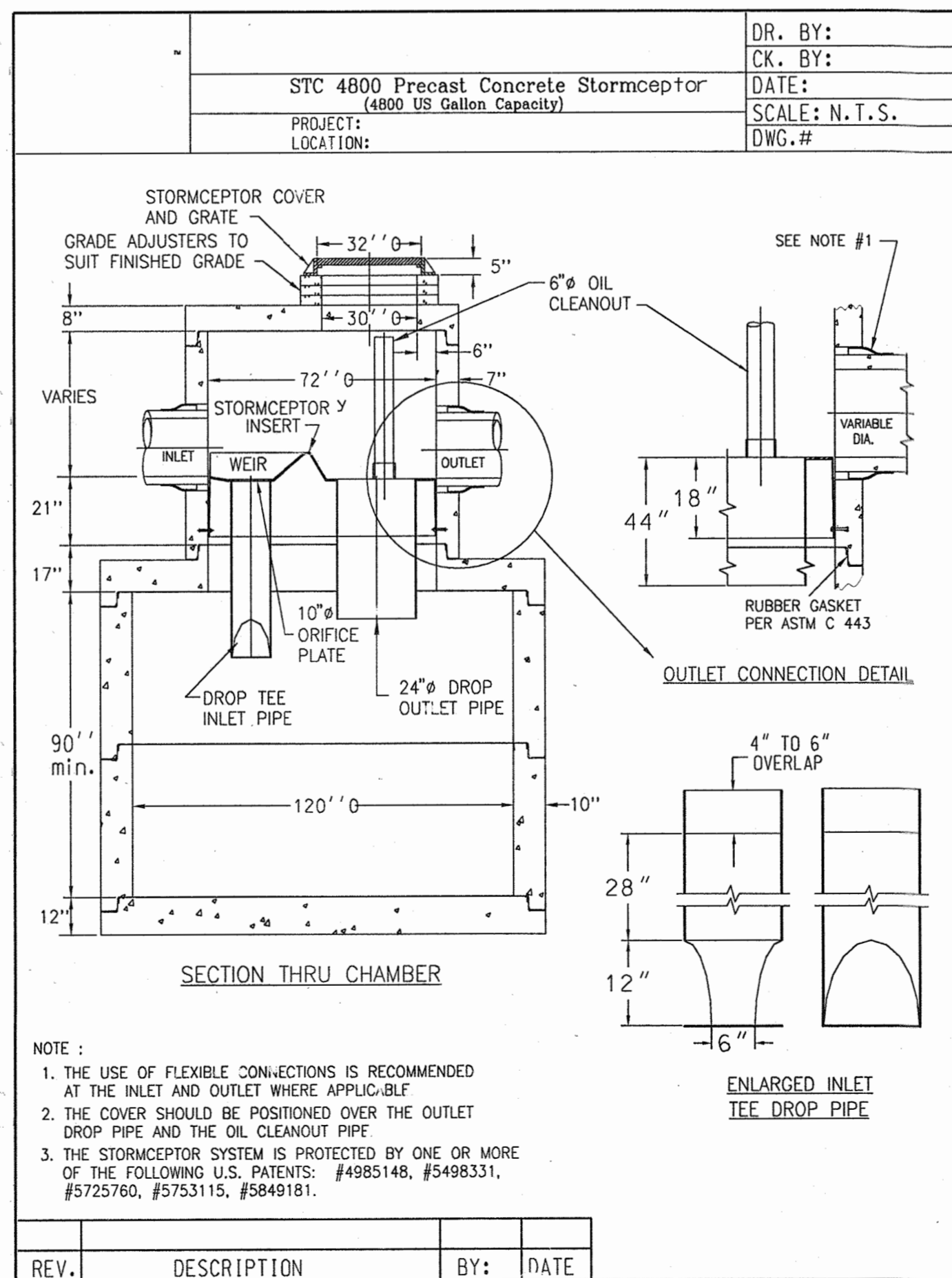


- NOTE:
1. THE USE OF FLEXIBLE CONNECTIONS IS RECOMMENDED AT THE INLET AND OUTLET WHERE APPLICABLE.
 2. THE COVER SHOULD BE POSITIONED OVER THE OUTLET DROP PIPE AND THE OIL CLEANOUT PIPE.
 3. THE STORMCEPTOR SYSTEM IS PROTECTED BY ONE OR MORE OF THE FOLLOWING U.S. PATENTS: #4985148, #5498331, #5725760, #5753115, #5849181.

SC-4 STORMCEPTOR DETAILS

NOT TO SCALE

C122 C116 C501



- NOTE:
1. THE USE OF FLEXIBLE CONNECTIONS IS RECOMMENDED AT THE INLET AND OUTLET WHERE APPLICABLE.
 2. THE COVER SHOULD BE POSITIONED OVER THE OUTLET DROP PIPE AND THE OIL CLEANOUT PIPE.
 3. THE STORMCEPTOR SYSTEM IS PROTECTED BY ONE OR MORE OF THE FOLLOWING U.S. PATENTS: #4985148, #5498331, #5725760, #5753115, #5849181.

SC-1 STORMCEPTOR DETAILS

NOT TO SCALE

C123 C116 C501

Precast Concrete Stormceptor® Order Request Form

Contractor Information

Name _____ Address _____ City _____ State _____ Zip Code _____ Contact _____ Phone _____ Fax _____

Owner Information

Name: JOHNS HOPKINS UNIVERSITY Phone: 443-778-5960 Fax: 443-778-5980

IMPERVIOUS DRAINAGE AREA FOR THIS UNIT: 1.1 ac.

Stormceptor® Model	Manhole Number
4500 <input type="checkbox"/>	Top Elevation (ft) _____
900 <input type="checkbox"/>	Inlet Pipe Invert (ft) _____
1200 <input type="checkbox"/>	Outlet Pipe Invert (ft) _____
1800 <input type="checkbox"/>	Pipe Type _____
2400 <input type="checkbox"/>	Inlet Pipe Inside Diameter (ID) _____
	Inlet Pipe Outside Diameter (OD) _____
	Outlet Pipe Inside Diameter (ID) _____
	Outlet Pipe Outside Diameter (OD) _____

Project Name: JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LAB DISTRICT UTILITY PLANT

Approximate time frame of delivery (weeks) _____

Delivery Address Street (For Permits) _____

City: _____ State: _____ Zip Code: _____

Designer Company: WHITMAN REQUARDT & ASSOCIATES

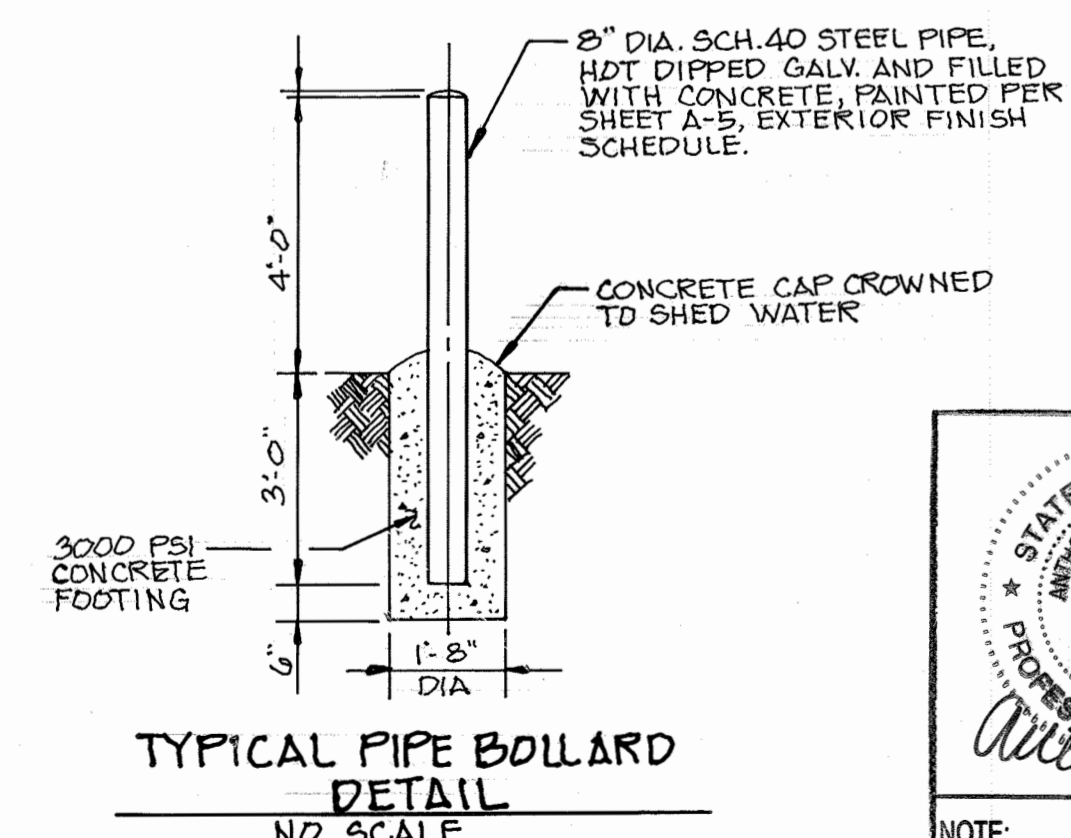
Designer Contact: _____ Phone: 410-235-3450 Fax: 410-243-5716

* These fields must be filled out for processing.

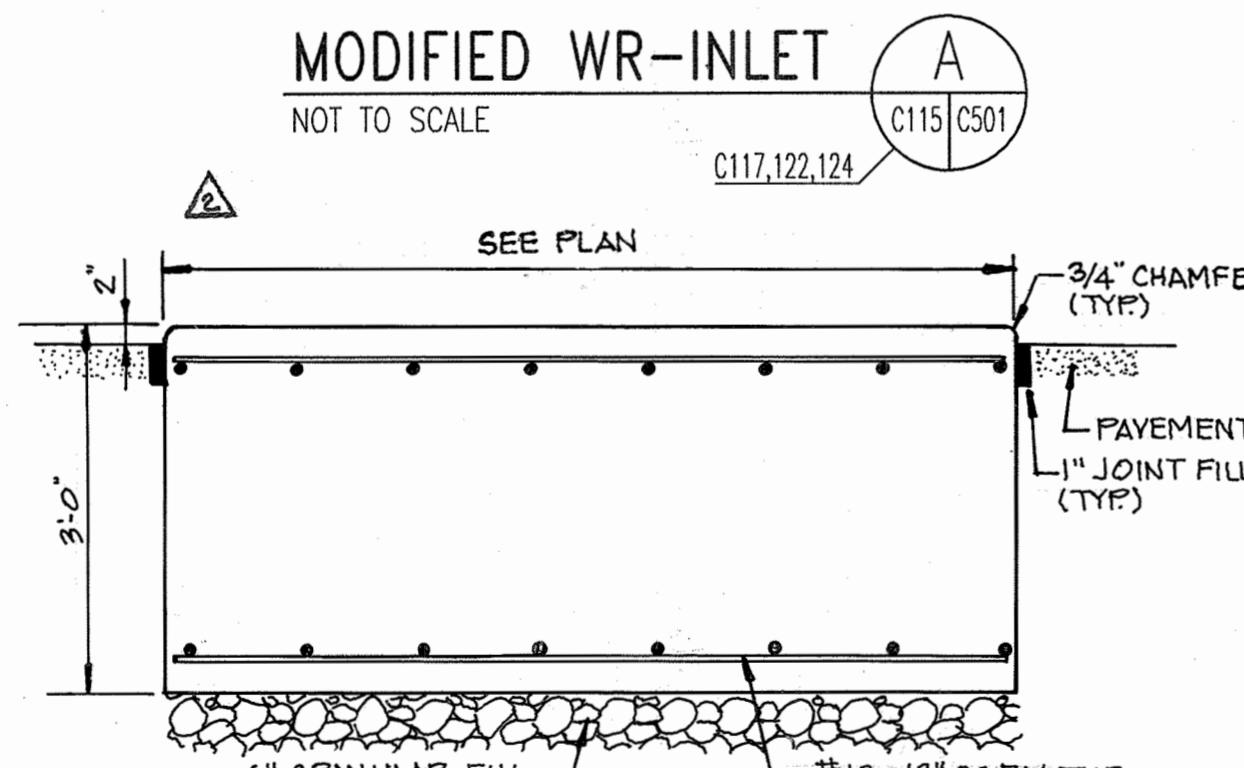
Hydro Conduit

PLEASE FILL OUT COMPLETELY AND FAX TO:
ATTN: DUANE THOMAS FAX: (301)698-5351, PHONE: (800)414-7960

NOTE: INLET SHALL BE CONSTRUCTED OF REINFORCED CONCRETE MIX NO. 2. SIZE, TYPE & DIRECTION OF INLET CONNECTION WILL VARY TO SUIT CONDITIONS. SEE S.H.A. SPECIFICATIONS FOR INLETS. REINFORCEMENT REQUIRED ON OUTSIDE, AS WELL AS ON INSIDE, OF WALLS BELOW 7'-0" WHEN "A" IS GREATER THAN 7'-0". SPACING, SAME AS FOR INSIDE OF WALL. PLACE "X" EXPANSION MATERIAL OF SAME TYPE APPROVED FOR PAVEMENT BETWEEN THE FRAME & ABUTTING RIGID PAVEMENT, & BETWEEN ENDS OF INLET CURB & NORMAL CURB. BRICK FOR MASONRY TO COMPLY WITH THE S.H.A. SPECIFICATIONS. FOR UNDEPRESSED INLETS, USE NORMAL PAVEMENT SLOPE. IF LADDER RUNGS ARE REQUIRED SEE STD. NO. MD 383.91 OR MD 383.92.



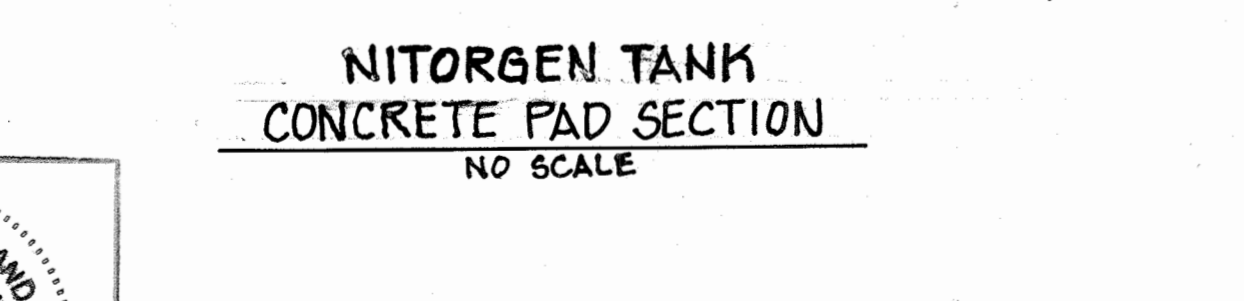
TYPICAL PIPE BOLLARD DETAIL



MODIFIED WR-INLET

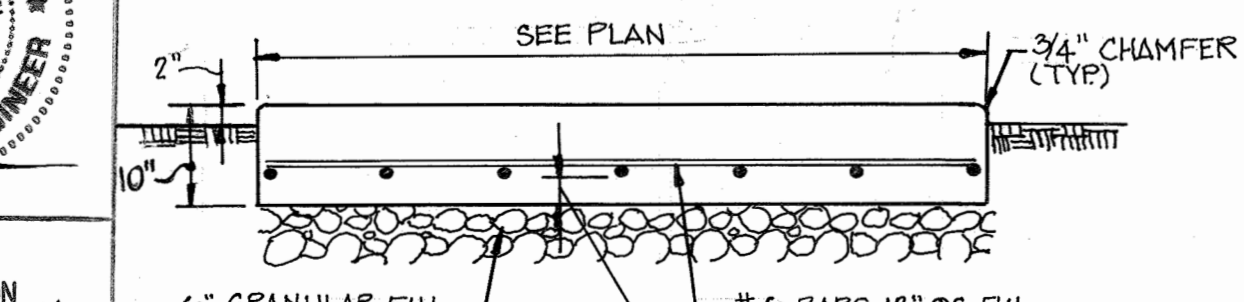
NOT TO SCALE

C115 C501



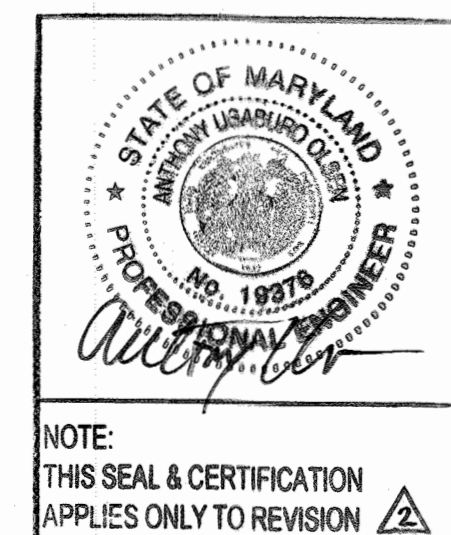
NITROGEN TANK CONCRETE PAD SECTION

NO SCALE



RECOVERY TANK/CHILLER CONCRETE PAD SECTION

NO SCALE



NOTE: THIS SEAL & CERTIFICATION APPLIES ONLY TO REVISION

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

4/20/05
4/23/05
4/24/05

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK
CHIEF, DIVISION OF LAND DEVELOPMENT WD
DIRECTOR

ADD SLAB DETAIL	1/20
ADD RETAINING WALL SHEETS	10/25/05
G BID SET	3/24/05

THE JOHNS HOPKINS UNIVERSITY
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JOHNS HOPKINS ROAD
LAUREL MARYLAND 20723-6099

THE JOHNS HOPKINS UNIVERSITY
SYSTEMS INTEGRATION BUILDINGS AND VAN PAD

SDP SET

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GRAPHIC SCALES

WR&A
WHITMAN, REQUARDT AND ASSOCIATES, LLP
801 S. CAROLINE STREET
BALTIMORE, MARYLAND 21231
410 - 235 - 3450

DETAILS

DRAWING NO. C501

Sheet 56 of 77

Scale: AS SHOWN
Designed By: R.B.C. Drawn By: C.J.K.
Checked By: A.U.O. Date: 03/25/05

ADD RETAINING WALL SHEETS	10/25/05
G BID SET	3/24/05

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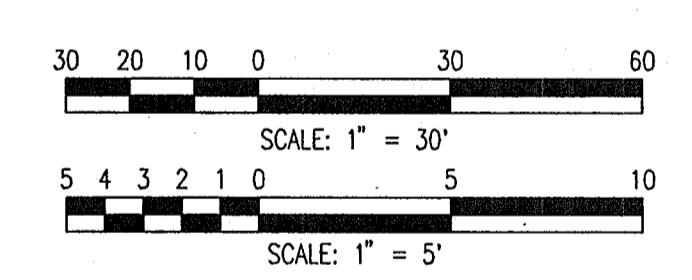


SYSTEMS INTEGRATION
 BUILDINGS AND VAN PAD

SDP SET

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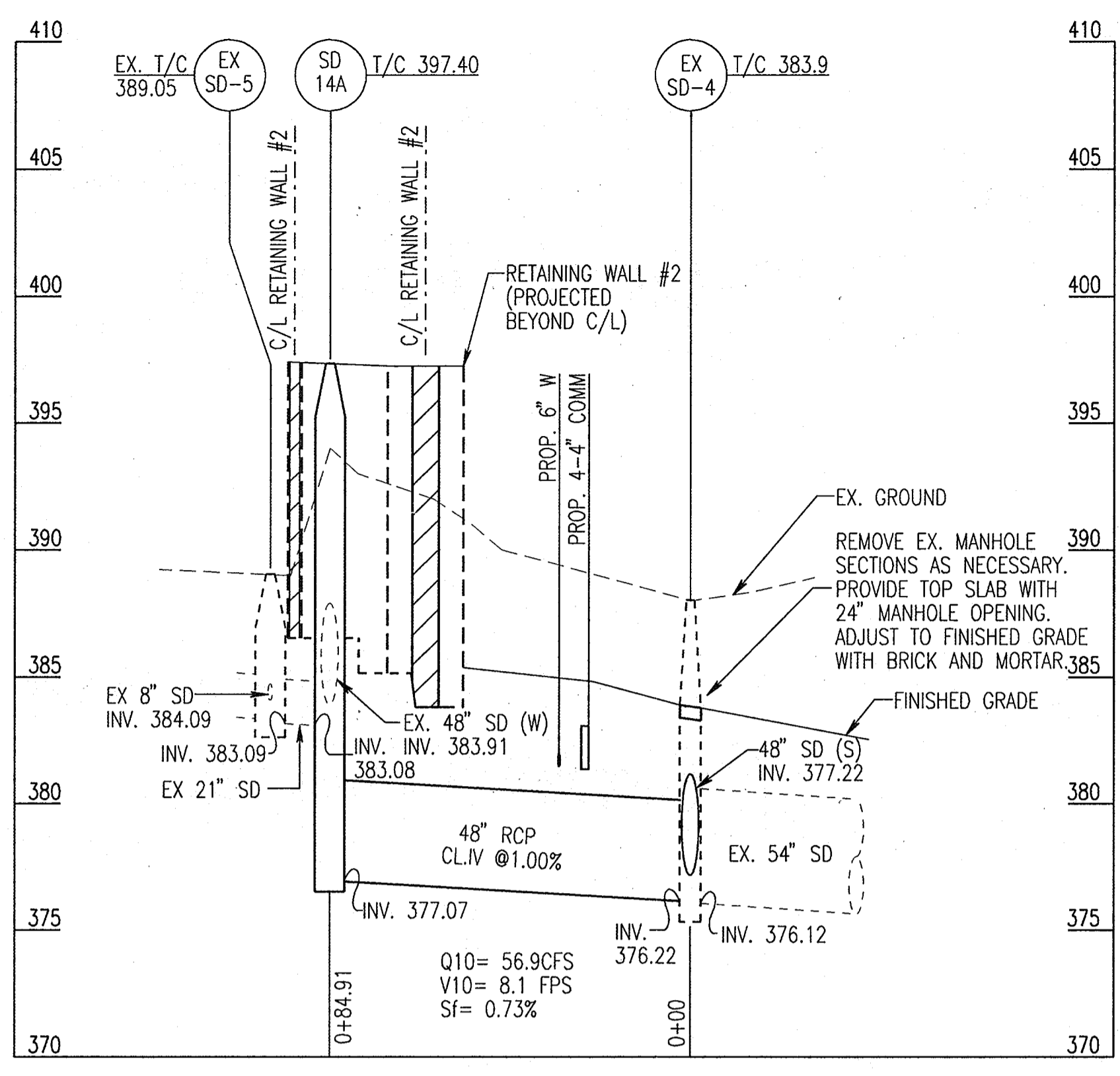
GRAPHIC SCALES



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 801 S. CAROLINE STREET
 BALTIMORE, MARYLAND 21231
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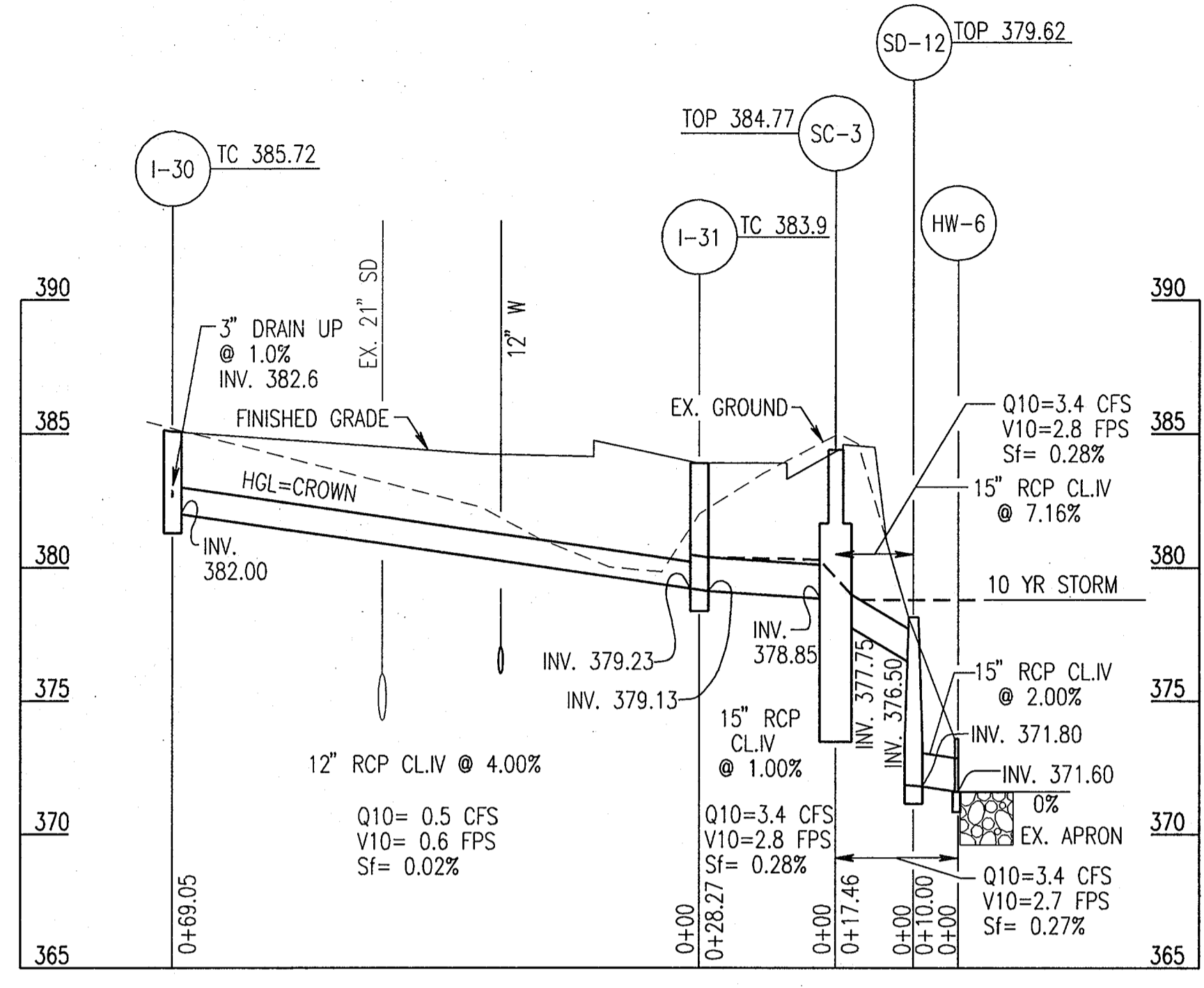
STORM DRAIN PROFILES

	DRAWING NO.
	C210
Sheet 50 of 77	
Scale: AS SHOWN	
Designed By: R.B.C.	Drawn By: C.J.K.
Checked By: A.U.O.	Date: 03/25/05



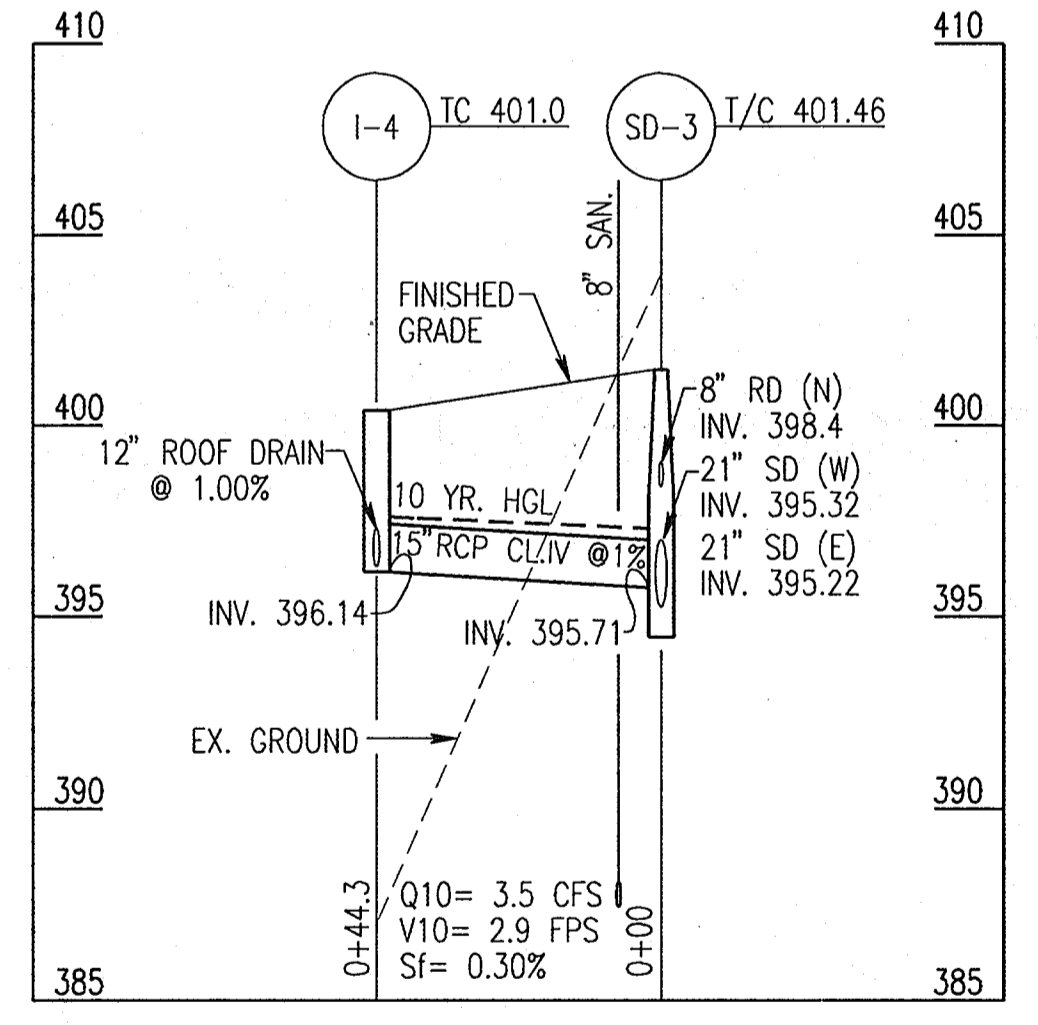
CENTER SERVICE ROAD STORM DRAIN: SD 14A TO EX SD-4

SCALE: 1" = 30' HORIZ
 1" = 5' VERT



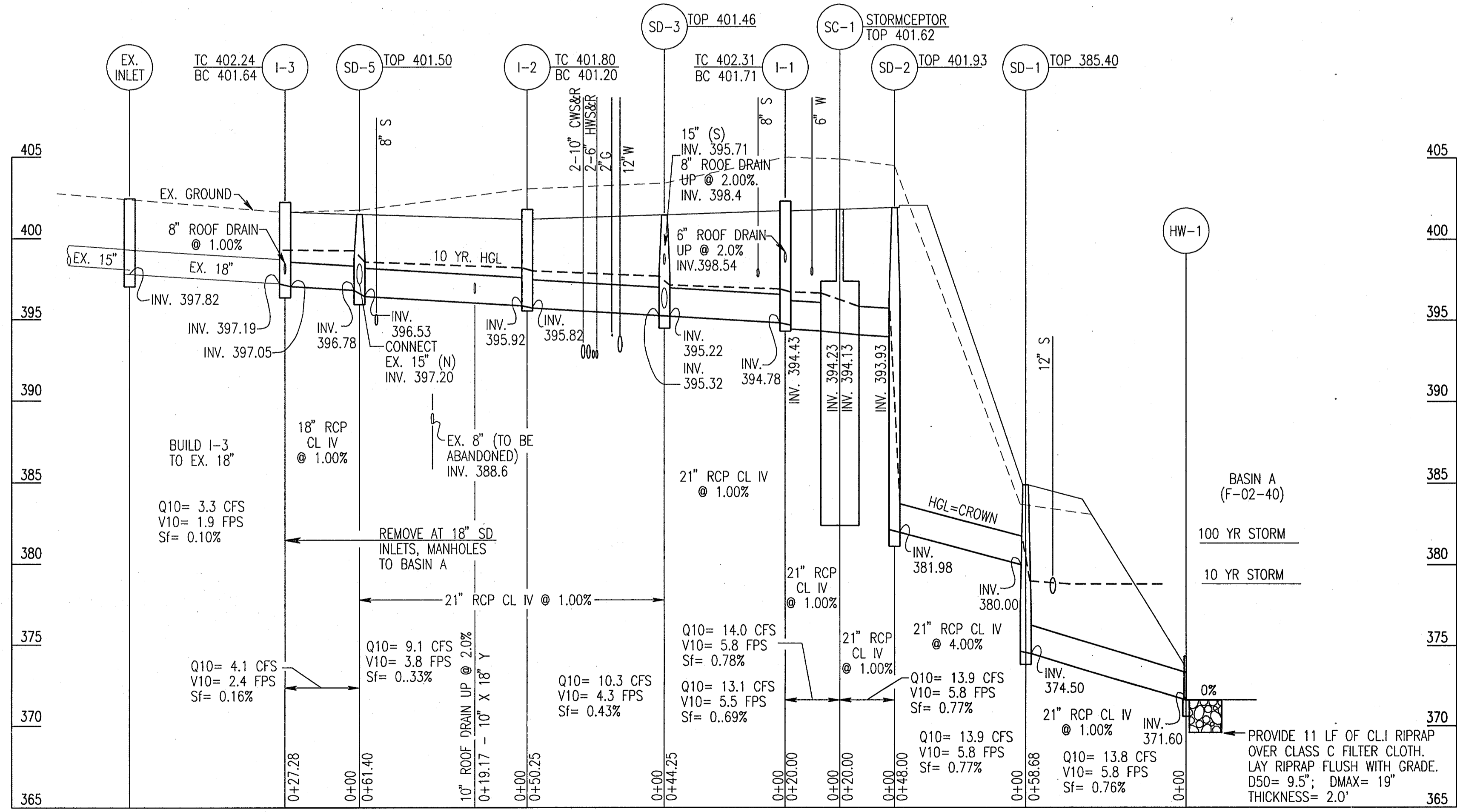
MIDDLE ROAD STORM DRAIN: I-30 TO HW-6

SCALE: 1" = 30' HORIZ
 1" = 5' VERT



SOUTH ROAD STORM DRAIN: I-4 TO SD-3

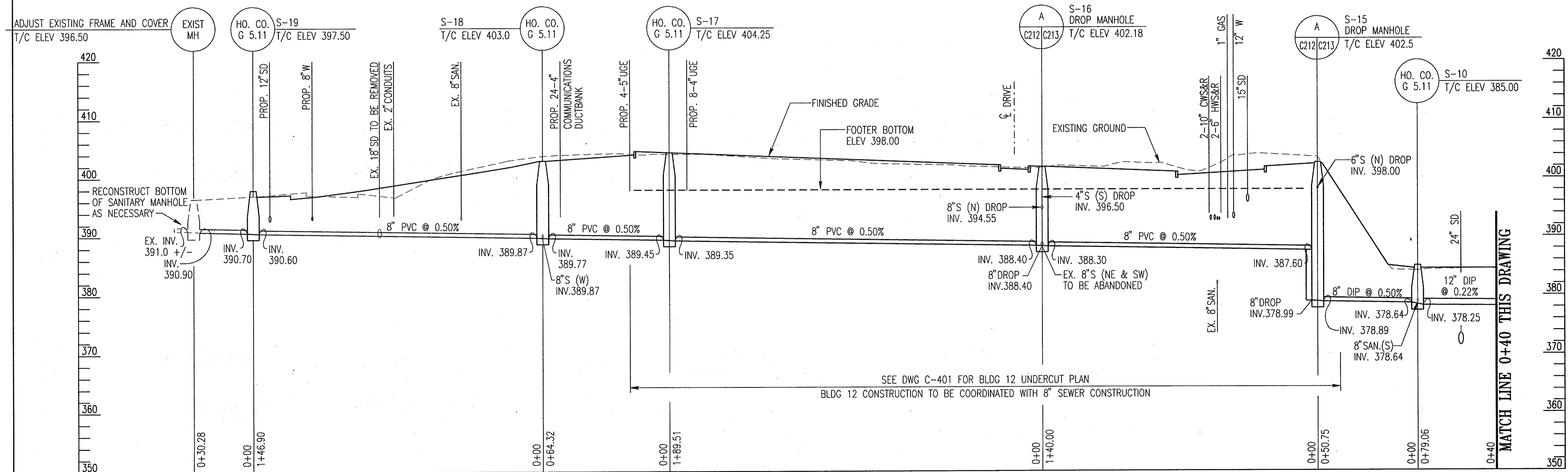
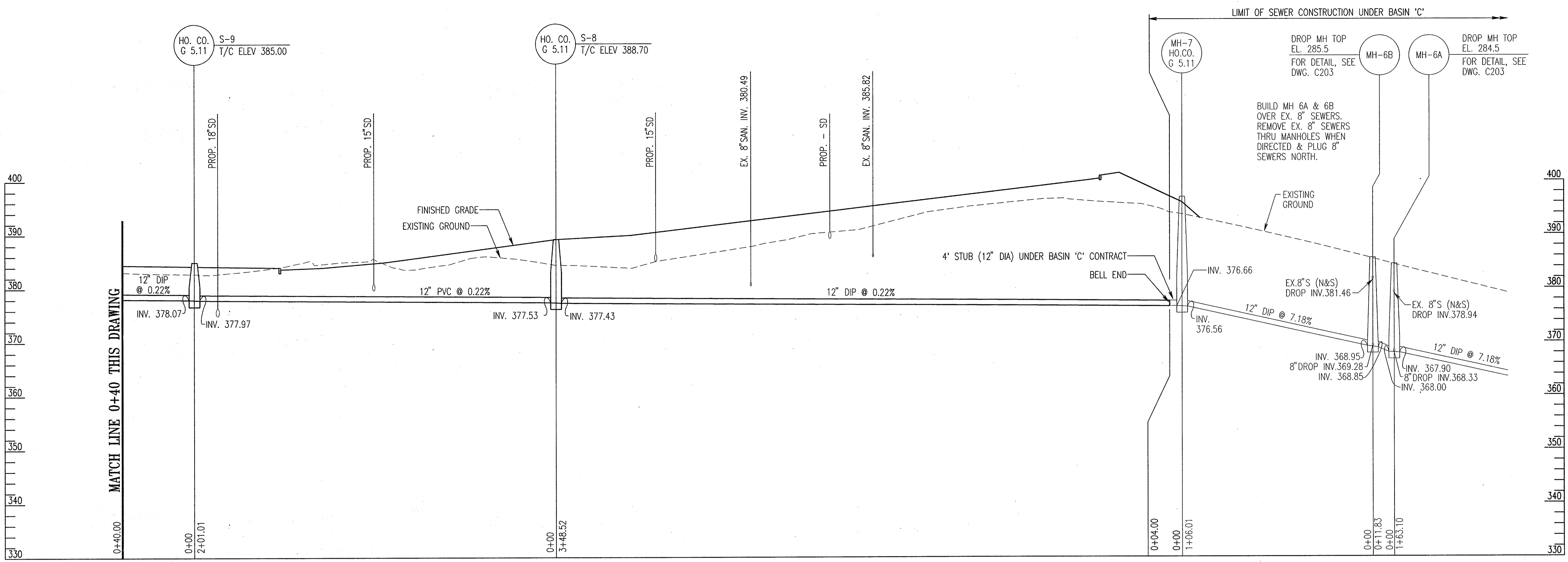
SCALE: 1" = 30' HORIZ
 1" = 5' VERT



SOUTH ROAD STORM DRAIN: I-3 TO HW-1

SCALE: 1" = 30' HORIZ
 1" = 5' VERT

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 CHIEF, DIVISION OF LAND DEVELOPMENT
 DIRECTOR



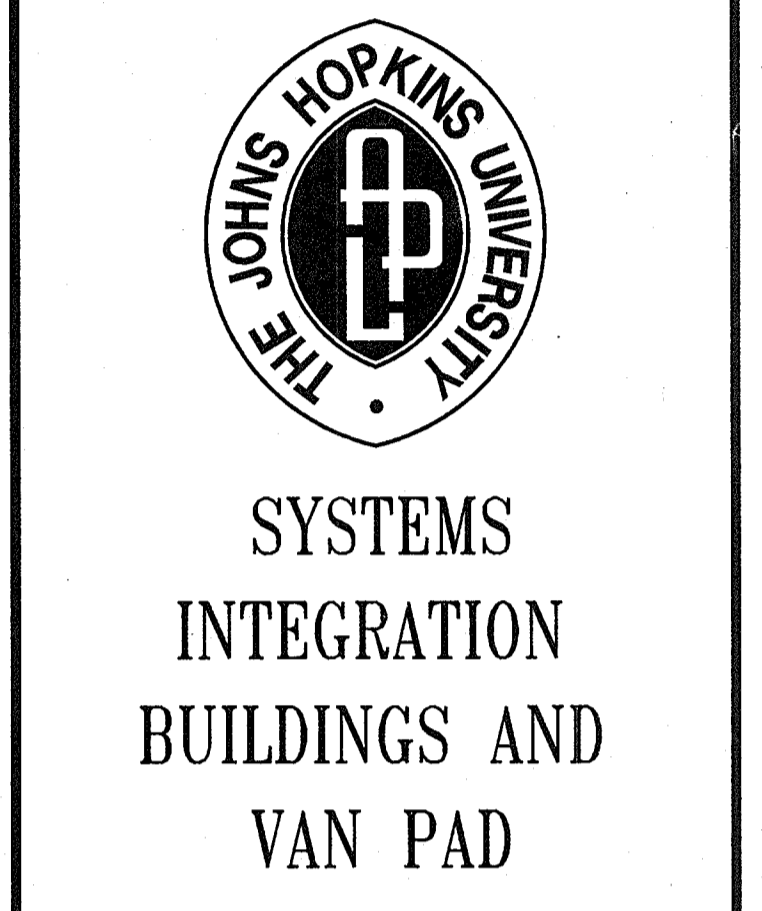
- PIPING NOTES**
- PVC PIPE AND FITTINGS SHALL BE ASTM D-3034 W/GASKETED JOINTS.
 - DIP PIPE SHALL BE AWWA C-151, SPECIAL THICKNESS CLASS 52. FITTINGS SHALL BE DUCTILE IRON AWWA C-153. PIPE AND FITTINGS SHALL BE CEMENT-LINED IN ACCORDANCE WITH AWWA C-104, DOUBLE THICKNESS, AND HAVE BITUMINOUS EXTERIOR COATING.
 - ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
 - TRENCH AND INSTALLATION OF NEW UTILITIES SHALL BE SCHEDULED SO THAT ALL TRENCHES WILL BE BACKFILLED AT THE END OF EACH DAY. NO OPEN TRENCHES WILL BE ALLOWED AT THE END OF EACH DAY. TRENCH AREAS SHALL BE MULCHED AND TEMPORARILY SEEDED IN NON-PAVED AREAS AND TRAFFIC BEARING SURFACES SHALL BE INSTALLED IN PAVED AREAS. SEE HOWARD COUNTY TRENCH BEDDING DETAILS G2.01.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 4/20/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 [Signature] 4/22/05
 CHIEF, DIVISION OF LAND DEVELOPMENT
 [Signature] 4/24/05
 DIRECTOR

ADD RETAINING WALL SHEETS		10/25/05
G	BID SET	3/24/05

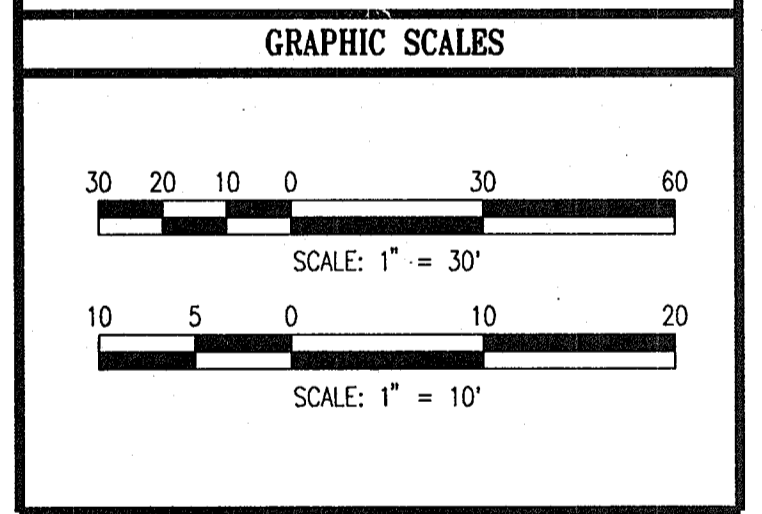
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 410 - 235 - 3450

SANITARY SEWER PROFILES

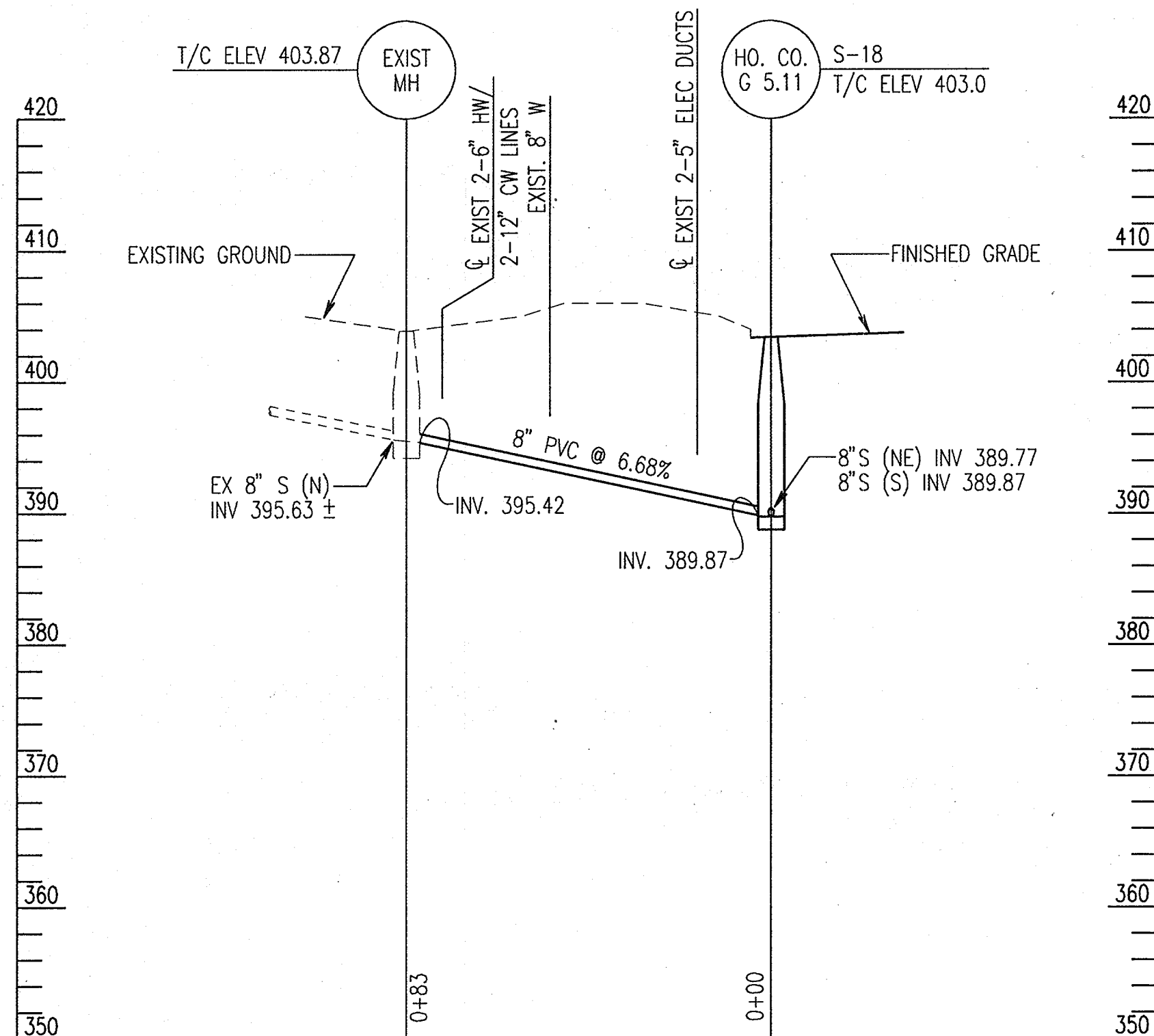
DRAWING NO. **C212**

Sheet 52 of 77

Scale: AS SHOWN

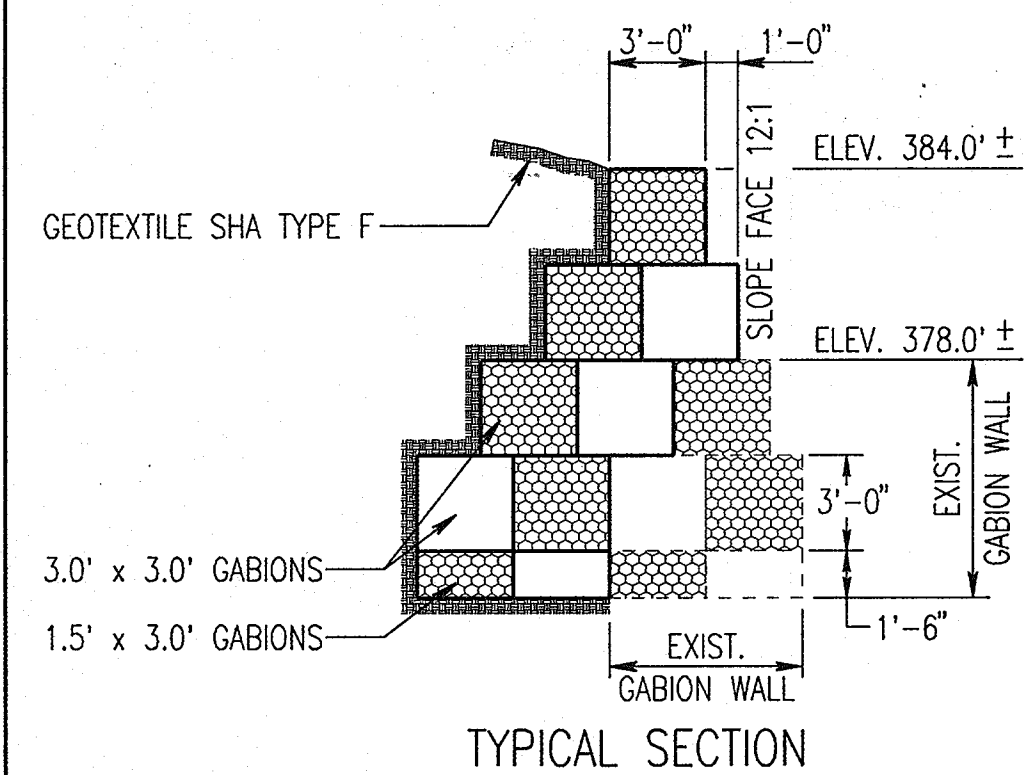
Designed By: R.B.C. Drawn By: C.J.K.

Checked By: A.U.O. Date: 03/25/05



PROFILE 8" SANITARY SEWER

SCALE: HORIZ. 1"=30'
VERT. 1"=10'

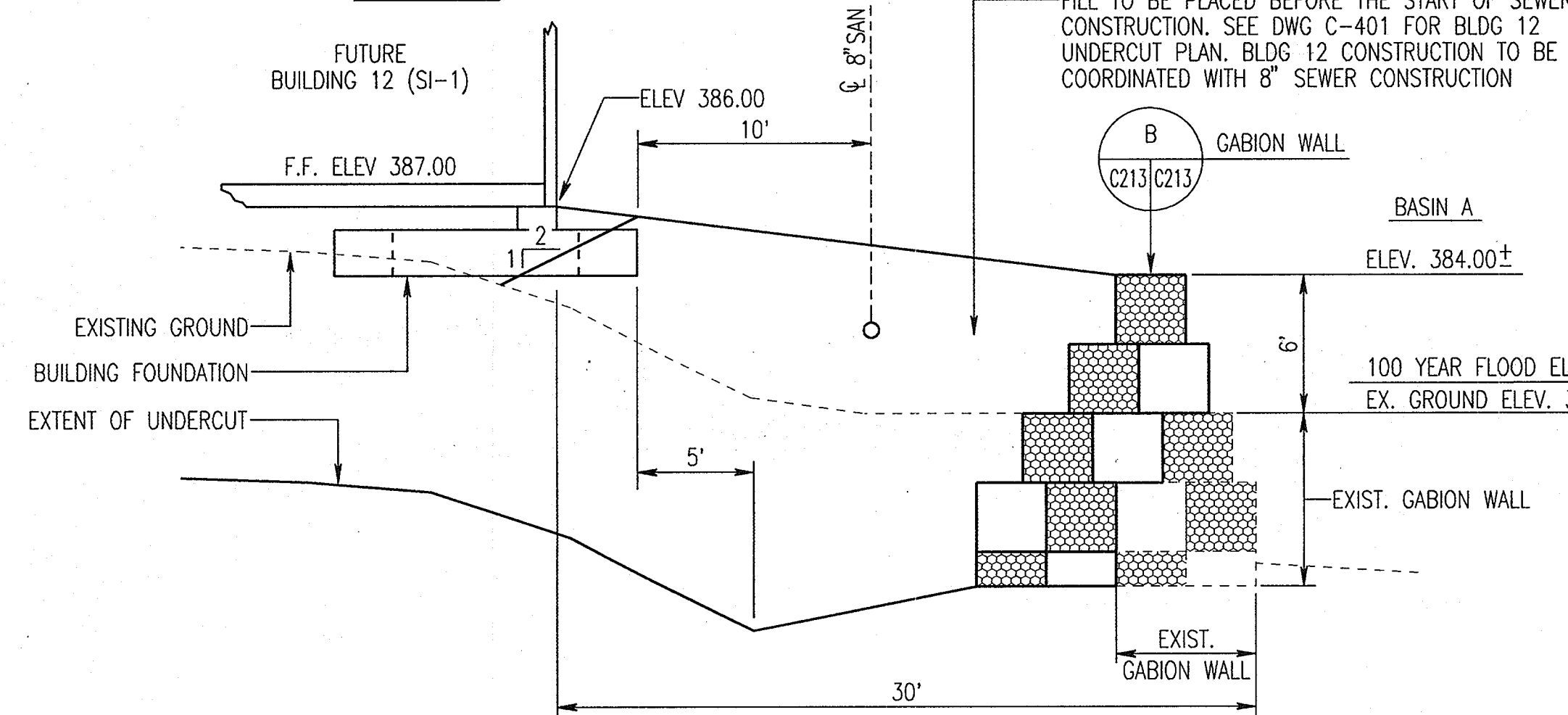


TYPICAL SECTION

- COUNTERFORTS SHALL BE USED ON GABION AT SLOPE 12:1.
- GABIONS SHALL BE VINYL COATED ON GALVANIZED STEEL REINFORCING BAR CAGE, COLOR BLACK.

GABION WALL

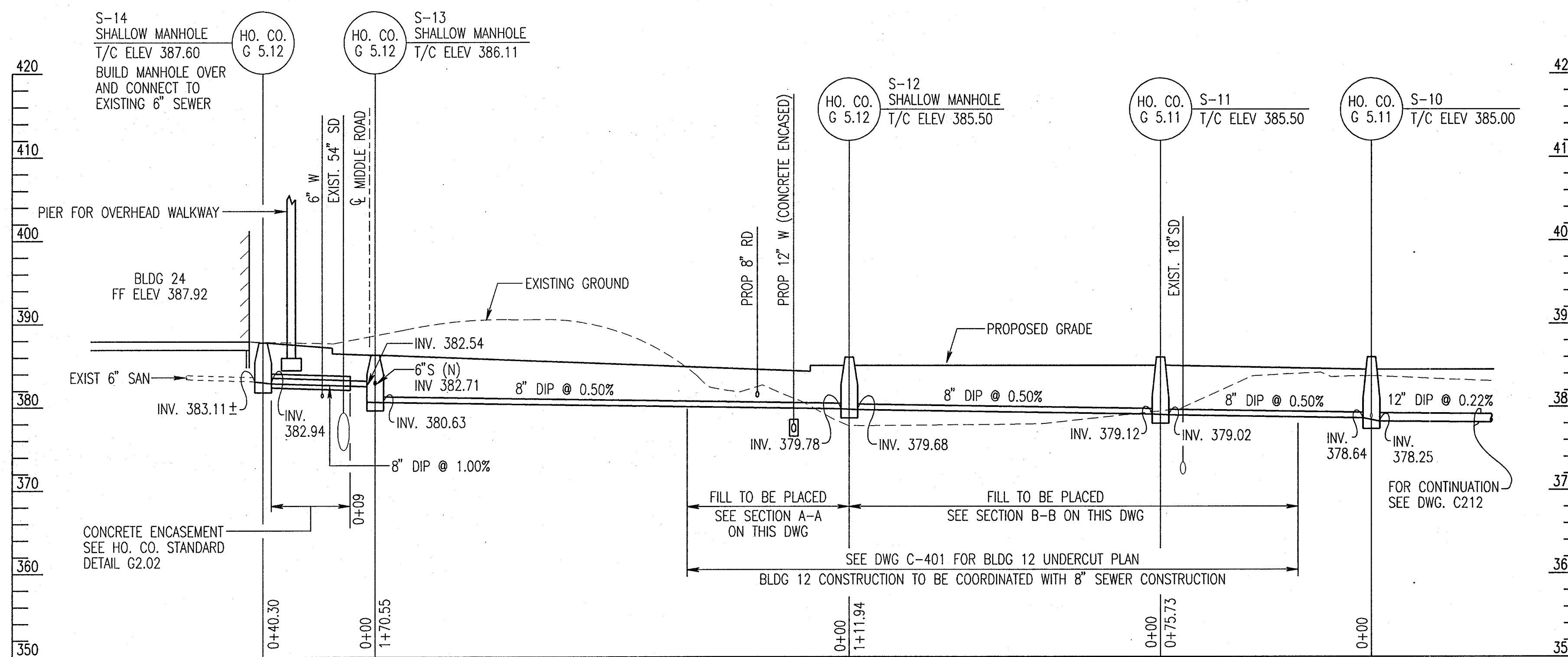
SCALE: 1" = 5'
C108, C115, C122



SECTION B-B

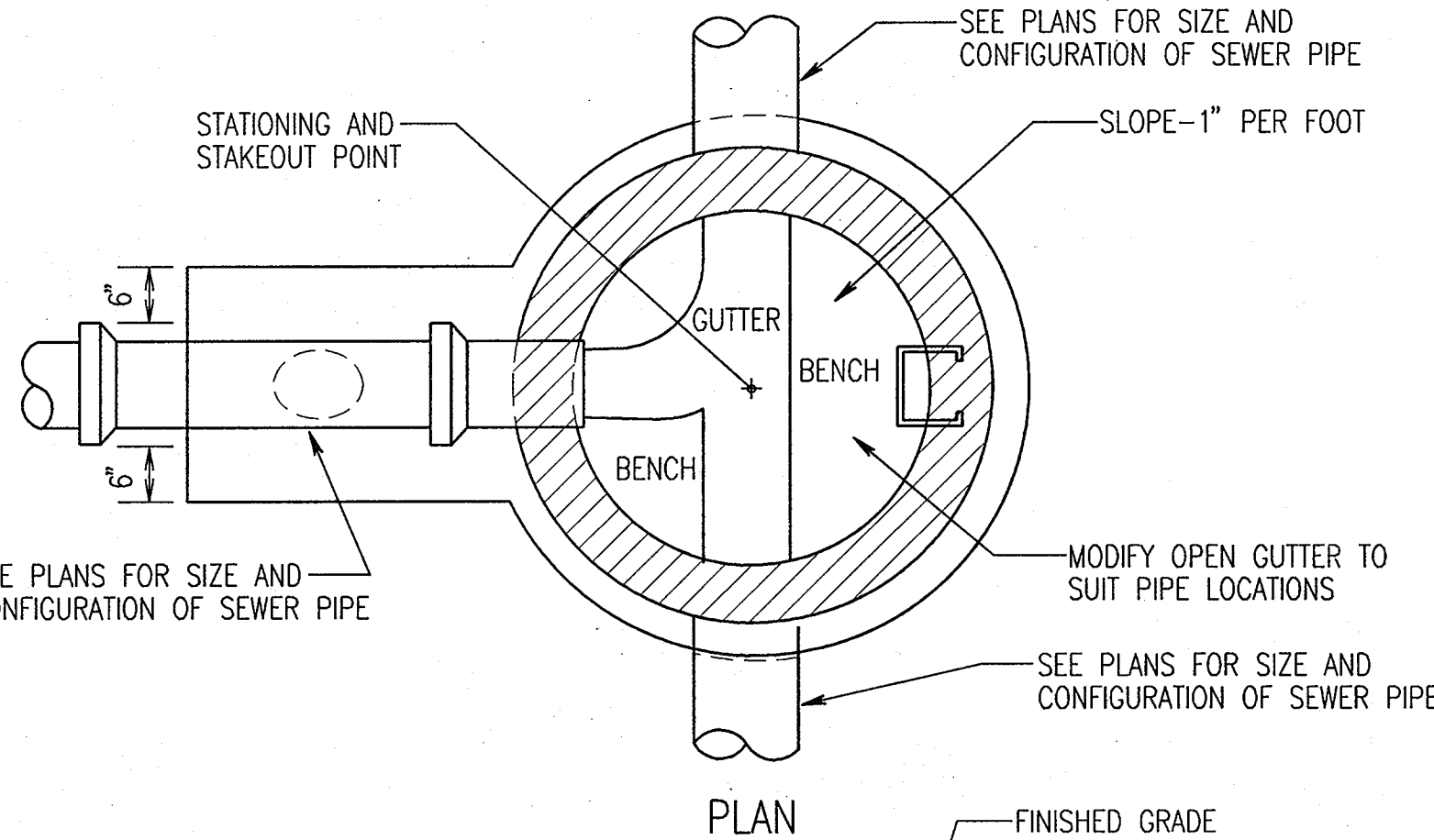
SCALE: 1"=5'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 [Signature] 4/20/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 [Signature] 4/23/05
 CHIEF, DIVISION OF LAND DEVELOPMENT
 [Signature] 4/20/05
 DIRECTOR

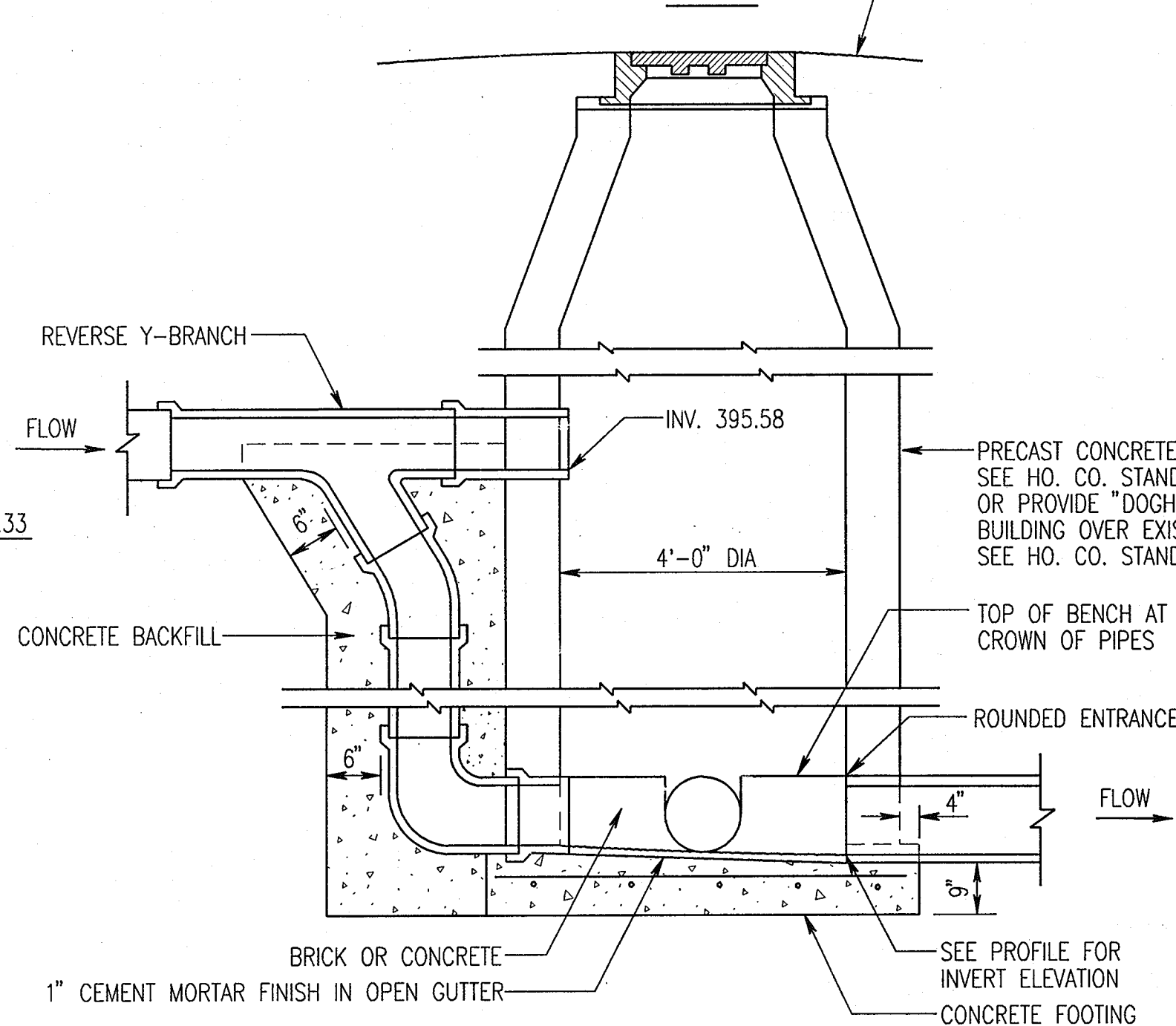


PROFILE 8" SANITARY SEWER

SCALE: HORIZ. 1"=30'
VERT. 1"=10'

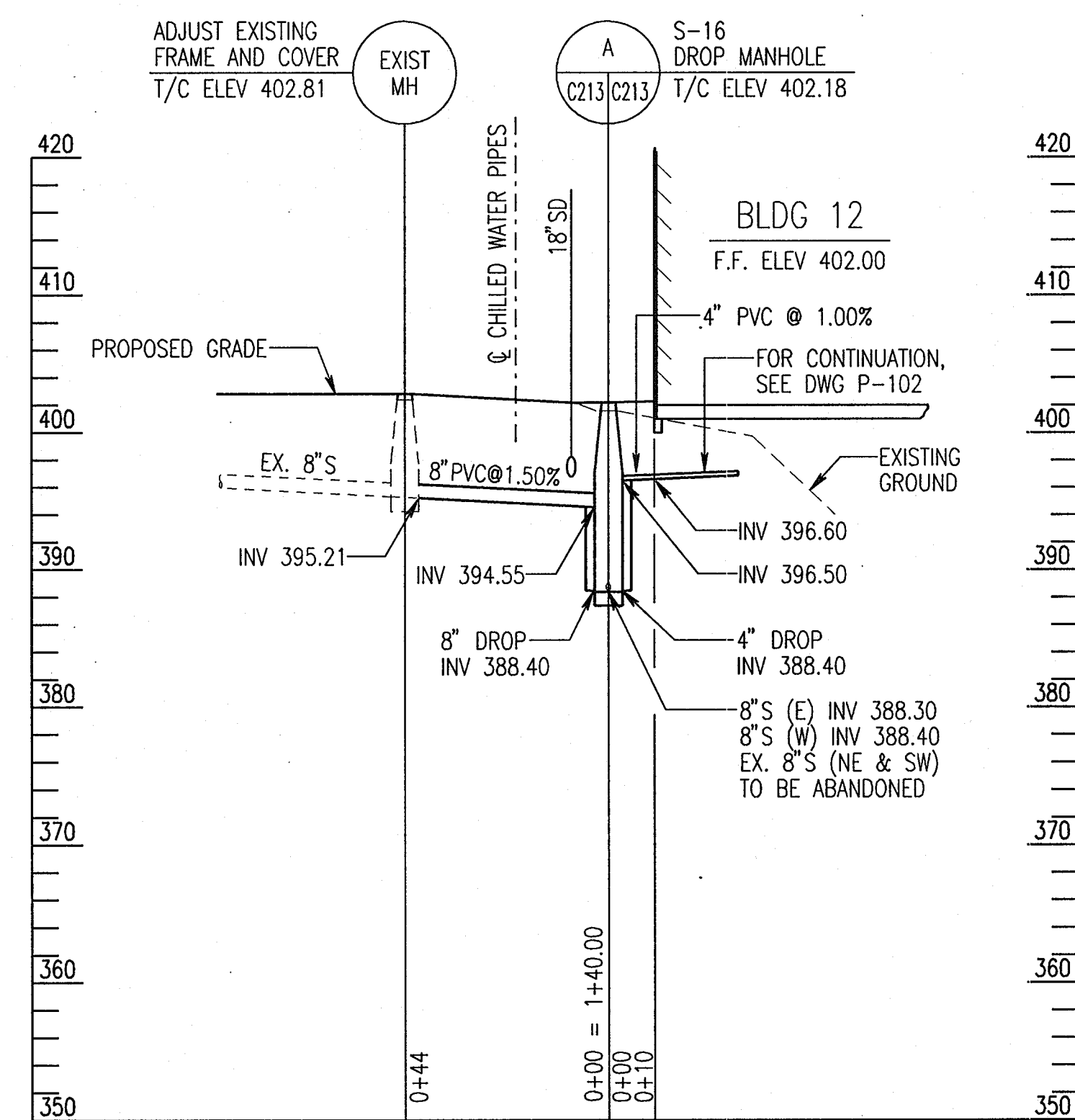


PLAN



DROP MANHOLE

NOT TO SCALE
C212, C115, C116, C122, C123



PROFILE 8" SANITARY SEWER AND 4" SANITARY SEWER FROM BLDG 12 (NORTH SIDE)

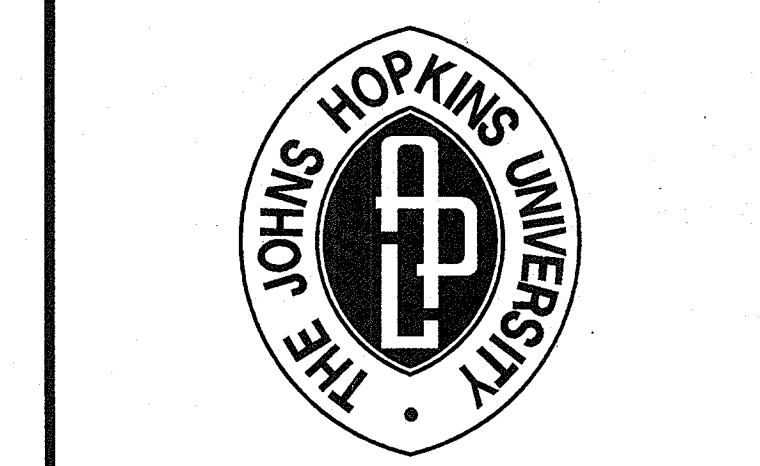
SCALE: HORIZ. 1"=30'
VERT. 1"=10'

PIPING NOTES:

- PVC PIPE AND FITTINGS SHALL BE ASTM D-3034 W/GASKETED JOINTS
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ADD RETAINING WALL SHEETS	10/25/05
G BID SET	3/24/05

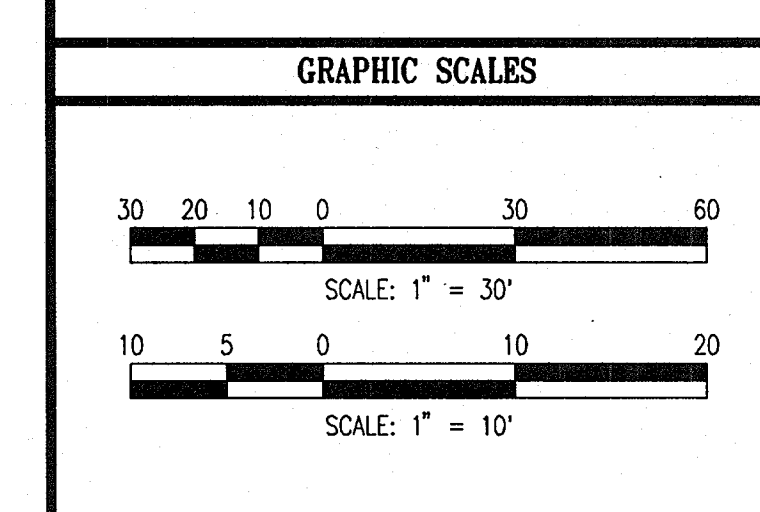
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 LAUREL MARYLAND 20723-6099



SYSTEMS INTEGRATION BUILDINGS AND VAN PAD

SDP SET

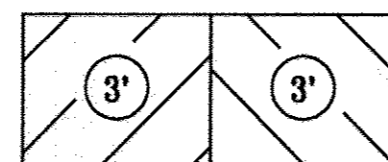
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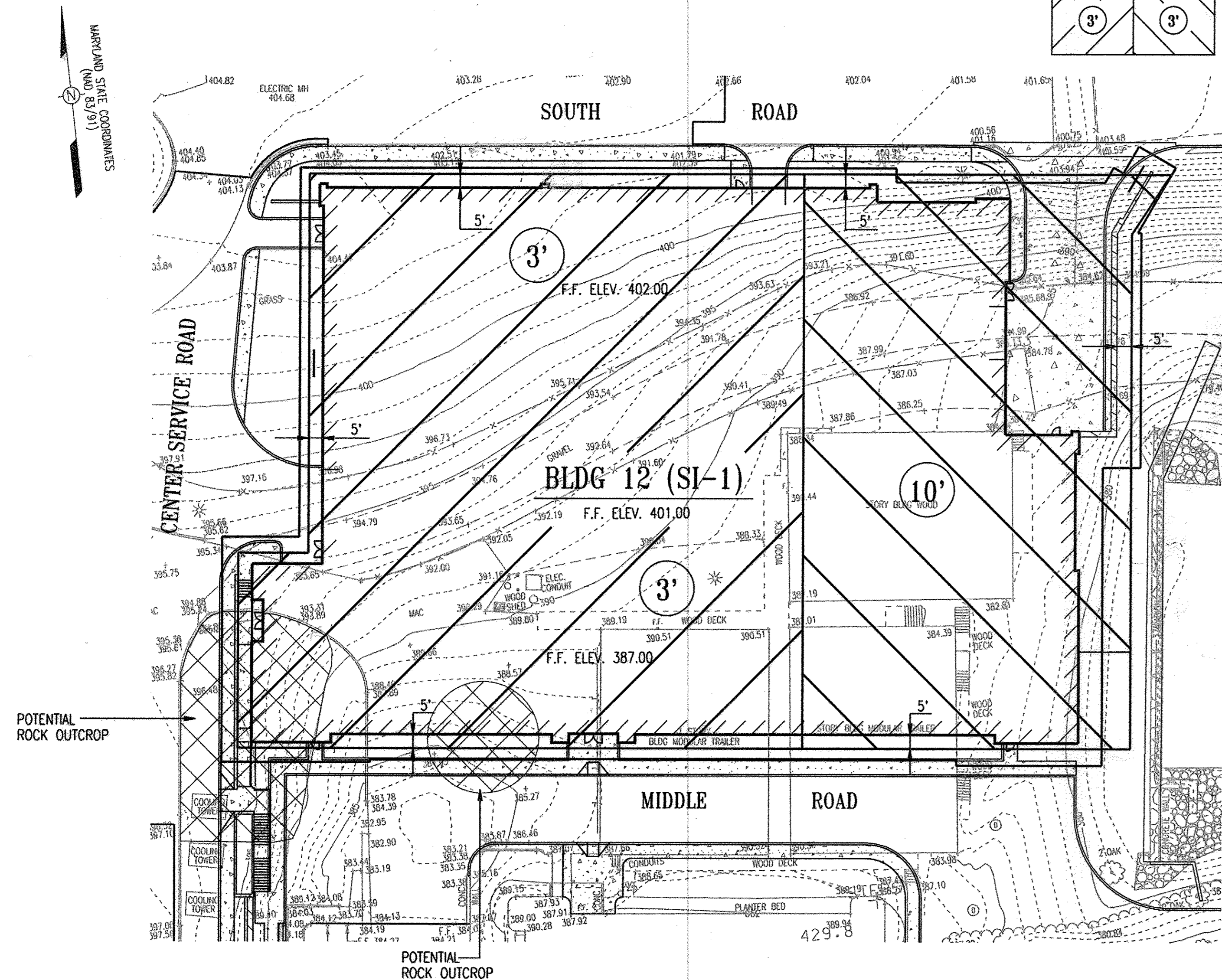
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 BALTIMORE, MARYLAND 21231
 410 - 235 - 3450

SANITARY SEWER PROFILES	
DRAWING NO.	C213
Sheet 53 of 58	77
Scale:	AS SHOWN
Designed By: R.B.C.	Drawn By: C.J.K.
Checked By: A.U.O.	Date: 03/25/05

LEGEND

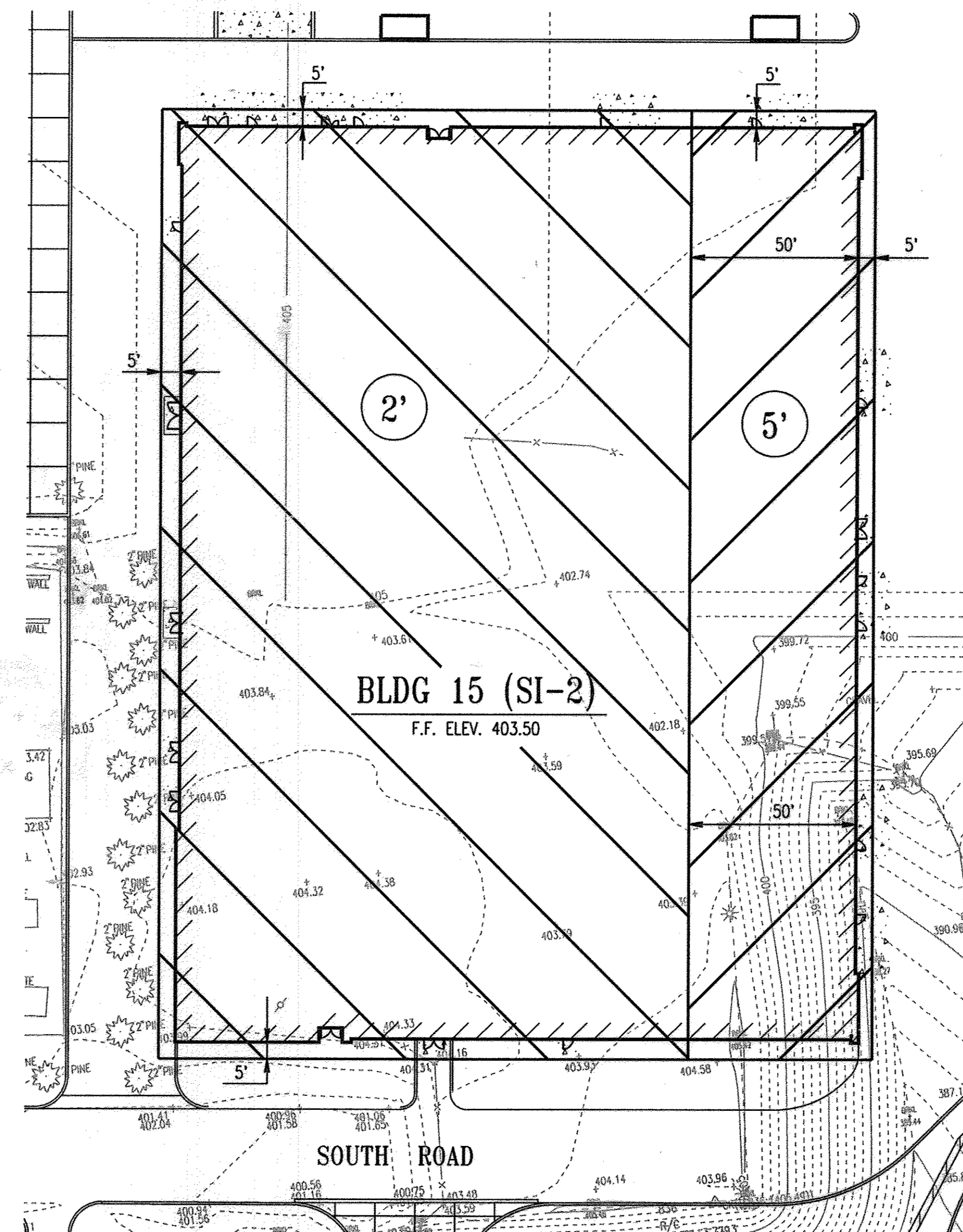


FEET TO BE UNDERCUT



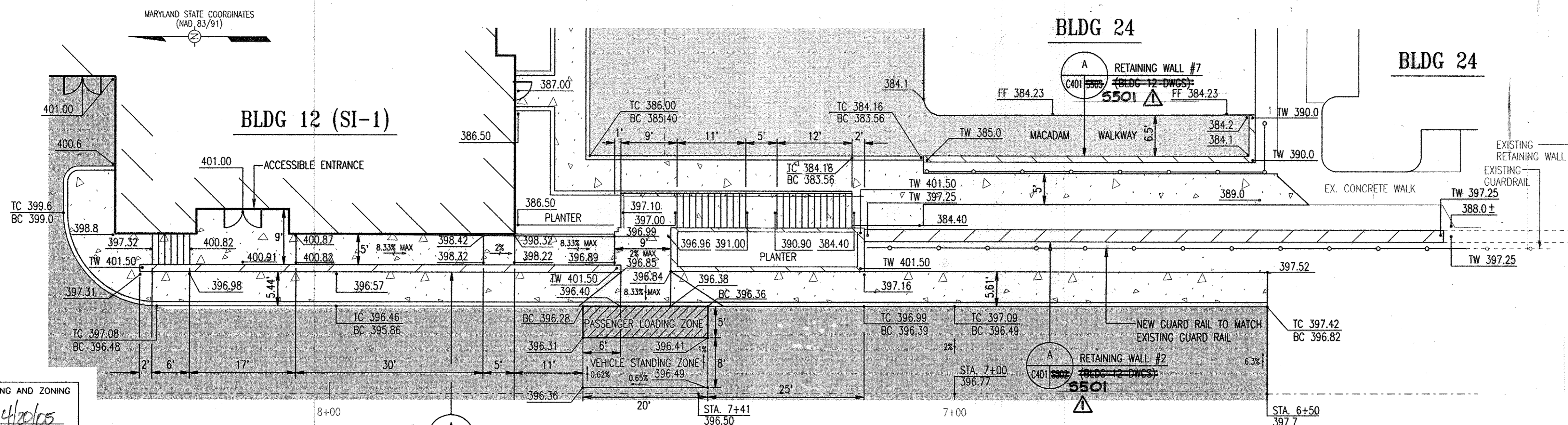
BUILDING 12 UNDERCUT PLAN

SCALE: 1"=30'



BUILDING 15 UNDERCUT PLAN

SCALE: 1"=30'



ENLARGED PLAN VIEW

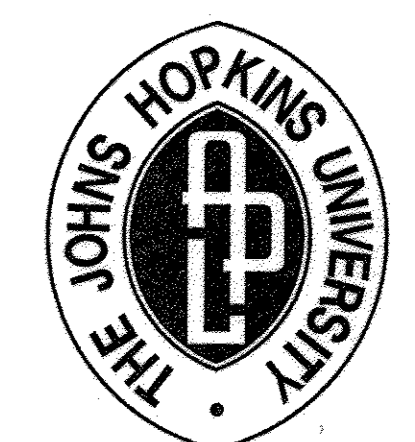
SCALE: 1"=10'

NOTE: SLOPE WITHIN PASSENGER LOADING ZONE AND VEHICLE STANDING ZONE SHALL NOT EXCEED 2% IN ANY DIRECTION

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 [Signature] 4/20/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE
 [Signature] 4/20/05
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE
 [Signature] 4/20/05
 DIRECTOR DATE

RETAINING WALL DETAIL	10/25/04
G BID SET	3/24/05

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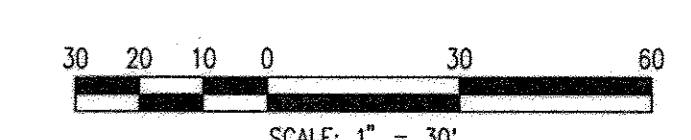
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SDP SET

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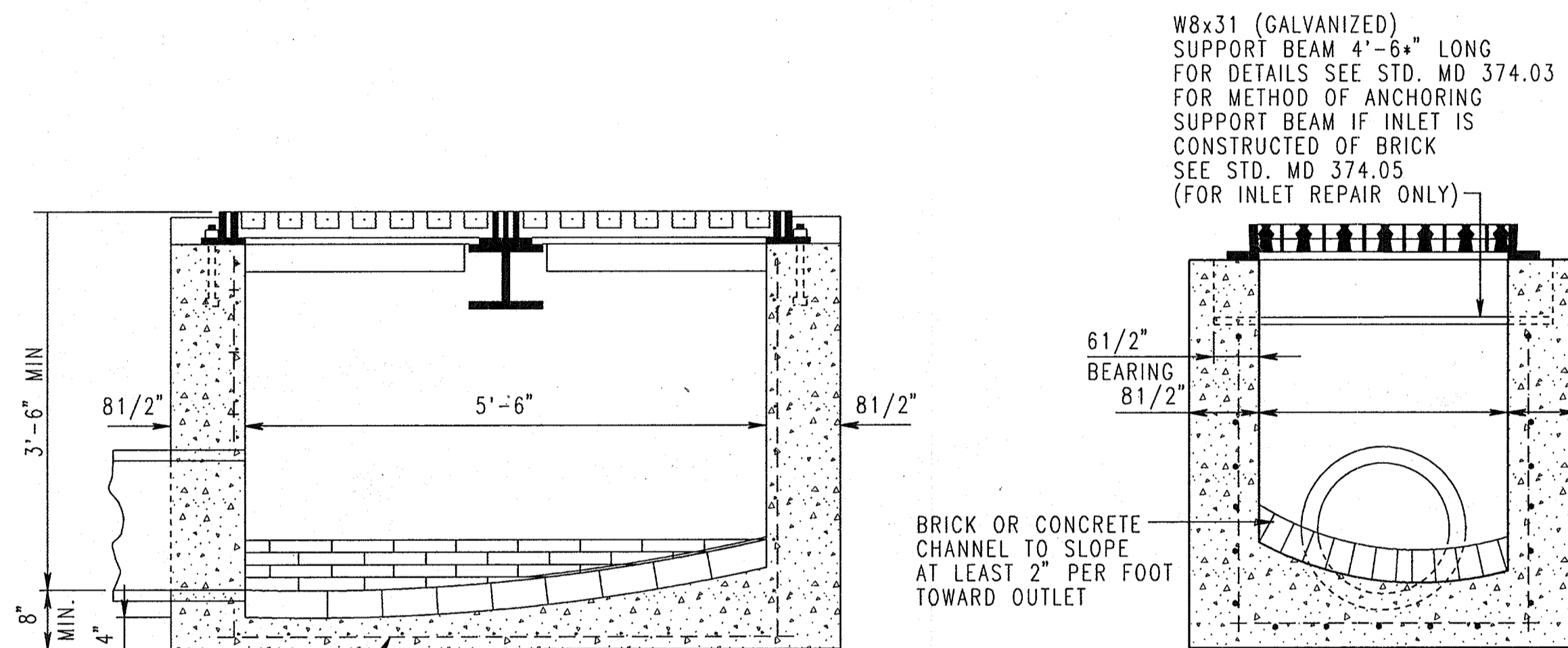
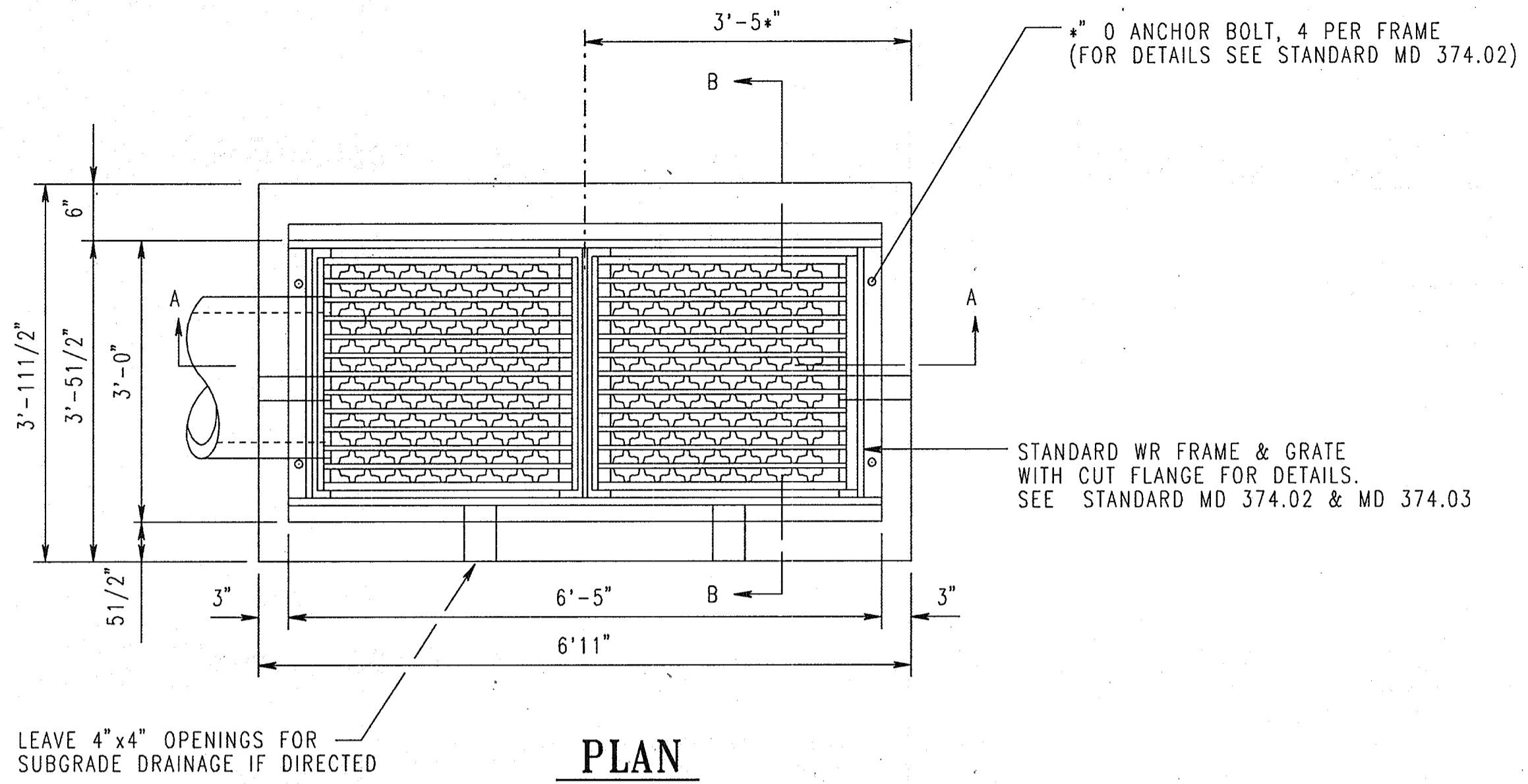


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ENLARGED PLAN VIEW

DRAWING NO.
C401
 Sheet 55 of 57

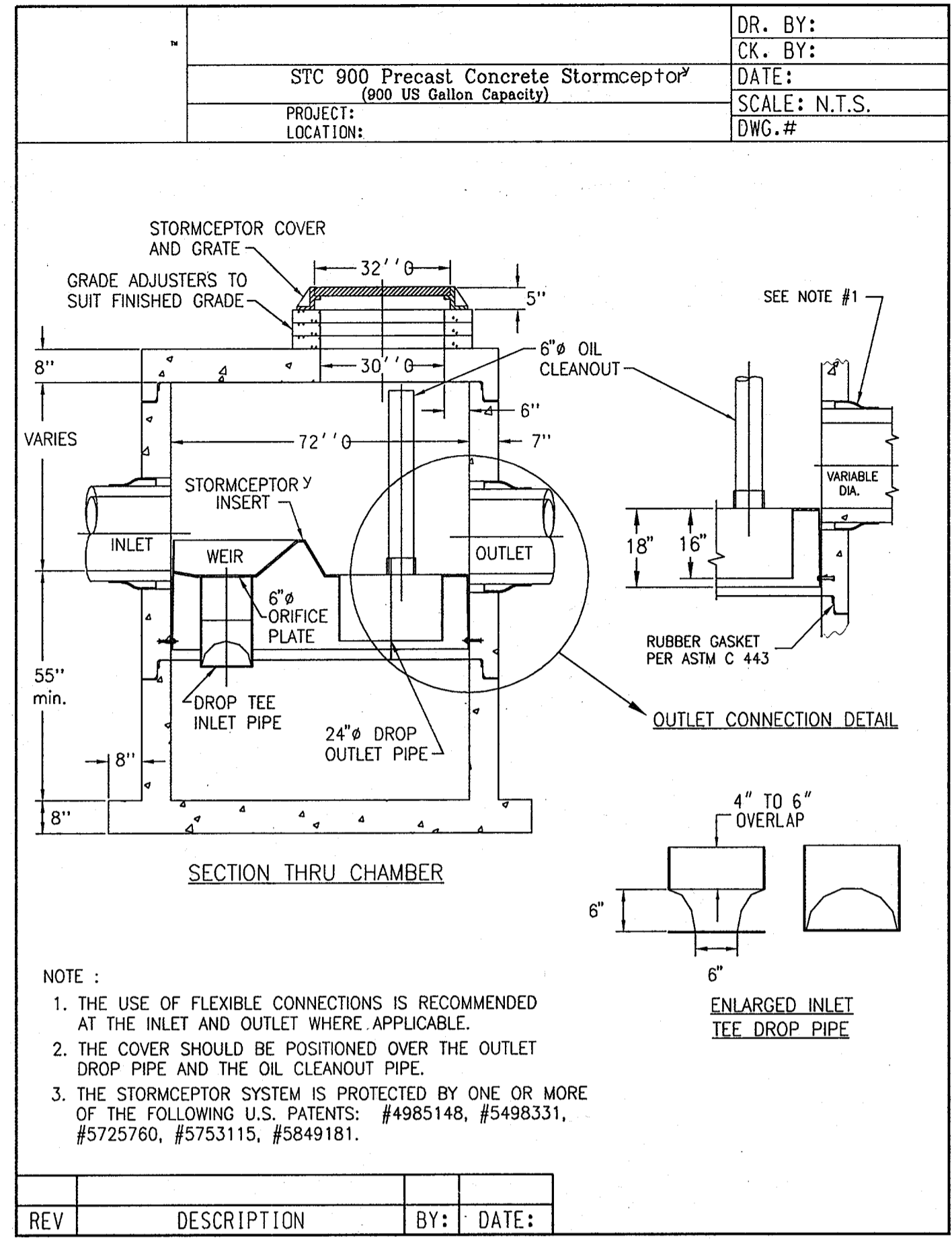
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 Checked By: A.U.O. Date: 03/25/05



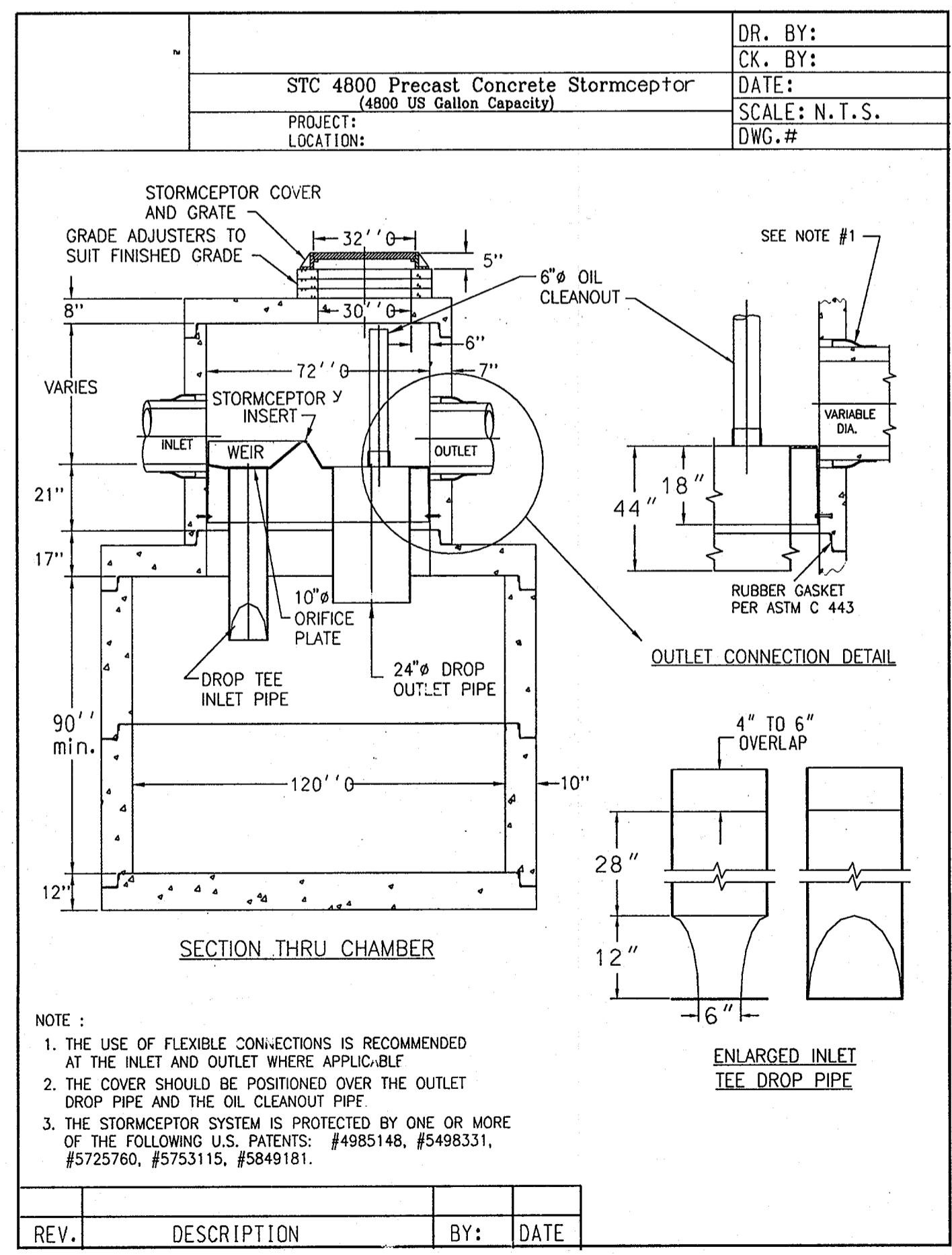
REINFORCEMENT: NO. 4 DEFORMED BARS @ 6" C/C 2 WAYS 2" COVER

NOTE
 INLET SHALL BE CONSTRUCTED OF REINFORCED CONCRETE MIX NO. 2. SIZE, TYPE & DIRECTION OF INLET CONNECTION WILL VARY TO SUIT CONDITIONS. SEE S.H.A. SPECIFICATIONS FOR INLETS. REINFORCEMENT REQUIRED ON OUTSIDE, AS WELL AS ON INSIDE, OF WALLS BELOW 7'-0" WHEN "A" IS GREATER THAN 7'-0". SPACING, SAME AS FOR INSIDE OF WALL. PLACE "X" EXPANSION MATERIAL OF SAME TYPE APPROVED FOR PAVEMENT BETWEEN THE FRAME & ABUTTING RIGID PAVEMENT, & BETWEEN ENDS OF INLET CURB & NORMAL CURB. BRICK FOR MASONRY TO COMPLY WITH THE S.H.A. SPECIFICATIONS. FOR UNDEPRESSED INLETS, USE NORMAL PAVEMENT SLOPE. IF LADDER RUNGS ARE REQUIRED SEE STD. NO. MD 383.91 OR MD 383.92.

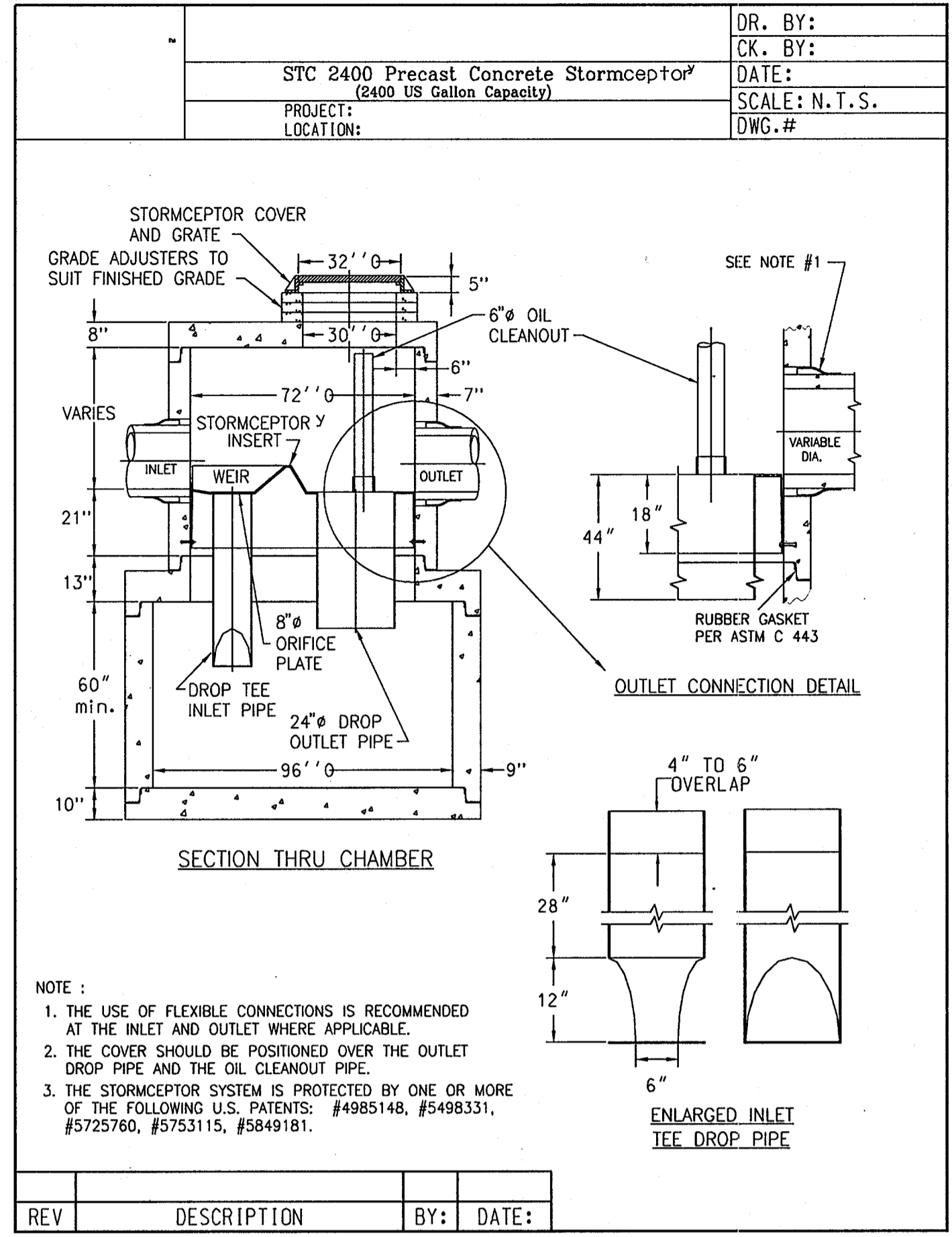
MODIFIED WR-INLET
 NOT TO SCALE
 C117,122,124



SC-2/SC-3 STORMCEPTOR DETAILS
 NOT TO SCALE
 C123 C116 C501



SC-1 STORMCEPTOR DETAILS
 NOT TO SCALE
 C123 C116 C501



SC-4 STORMCEPTOR DETAILS
 NOT TO SCALE
 C122 C115 C501

Precast Concrete **Stormceptor** Order Request Form

Contractor Information

Name _____
 Address _____
 City _____
 State _____
 Zip Code _____
 Contact _____
 Phone _____
 Fax _____

Owner Information

Name: JOHNS HOPKINS UNIVERSITY
 Phone: 443-778-5860
 Fax: 443-778-5980

IMPERVIOUS DRAINAGE AREA FOR THIS UNIT: 1.1 ac.

STC Stormceptor Model	Manhole Number
450i <input type="checkbox"/>	Top Elevation (ft) _____
900 <input type="checkbox"/>	Inlet Pipe Invert (ft) _____
1200 <input type="checkbox"/>	Outlet Pipe Invert (ft) _____
1800 <input type="checkbox"/>	Pipe Type _____
2400 <input type="checkbox"/>	Inlet Pipe Inside Diameter (ID) _____
	Inlet Pipe Outside Diameter (OD) _____
	Outlet Pipe Inside Diameter (ID) _____
	Outlet Pipe Outside Diameter (OD) _____

Project Name: JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LAB DISTRICT UTILITY PLANT
 Approximate time frame of delivery (weeks) _____
 Delivery Address Street (For Permits) _____
 City: _____ State: _____ Zip Code: _____
 Designer Company: WHITMAN REQUARDT & ASSOCIATES
 Designer Contact: _____ Phone: 410 235-3450 Fax: 410 243-5716

* These fields must be filled out for processing.

PLEASE FILL OUT COMPLETELY AND FAX TO:
 ATTN: DUANE THOMAS FAX: (301)698-5351, PHONE: (800)414-7960

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Howard County 4/20/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE

Camdy R. Rasmussen 4/20/05
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Paul A. Leavelle 4/22/05
 DIRECTOR DATE

ADD RETAINING WALL SHEETS 10/25/05
 G BID SET 3/24/05

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THE JOHNS HOPKINS UNIVERSITY
 SYSTEMS INTEGRATION BUILDINGS AND VAN PAD

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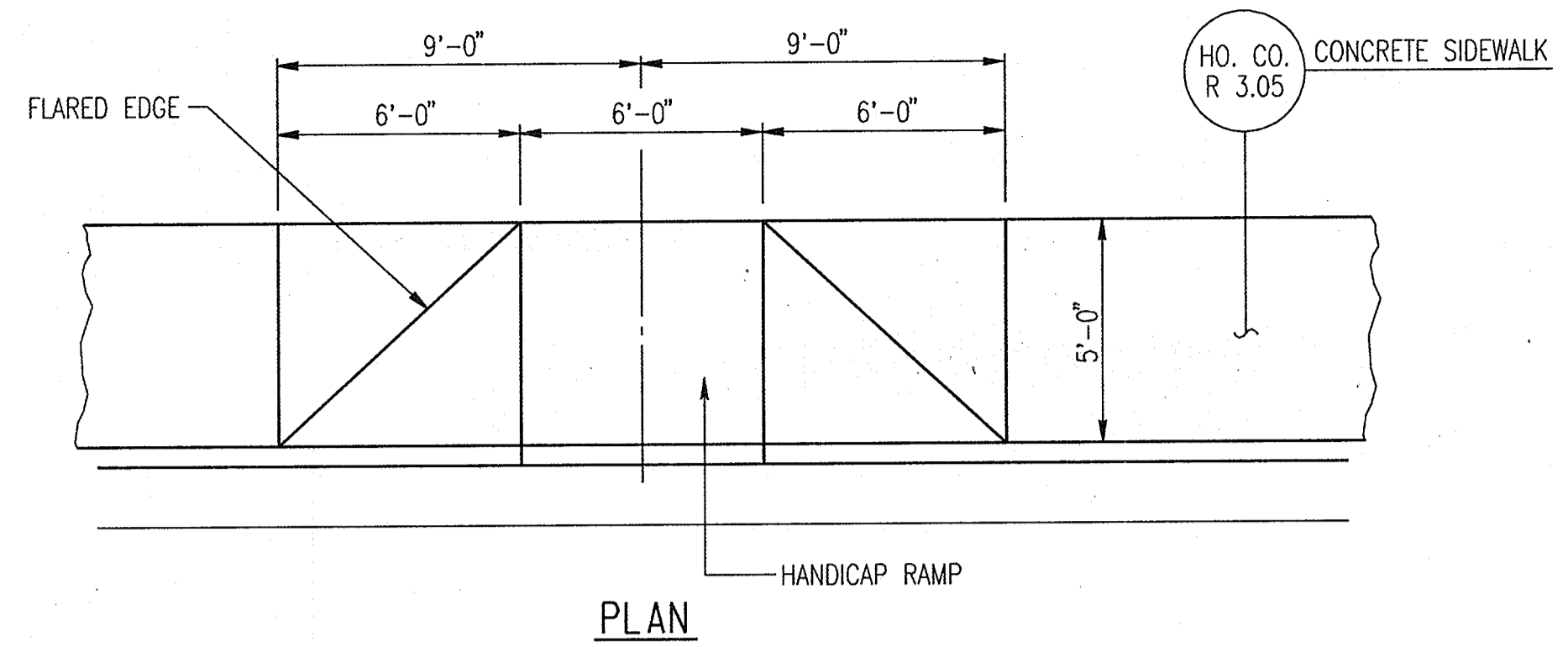
WR&A
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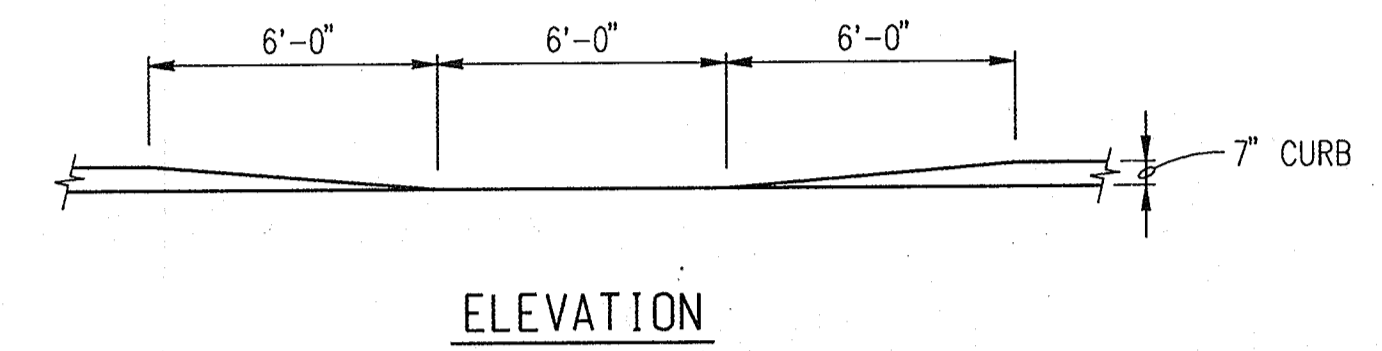
DRAWING NO. **C501**

Sheet 56 of 77

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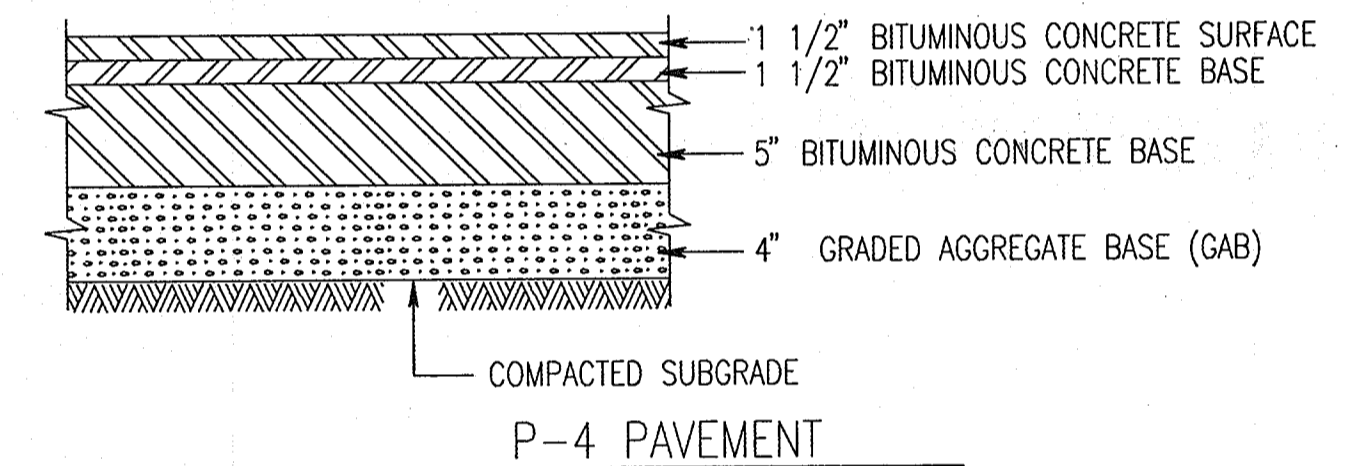


PLAN



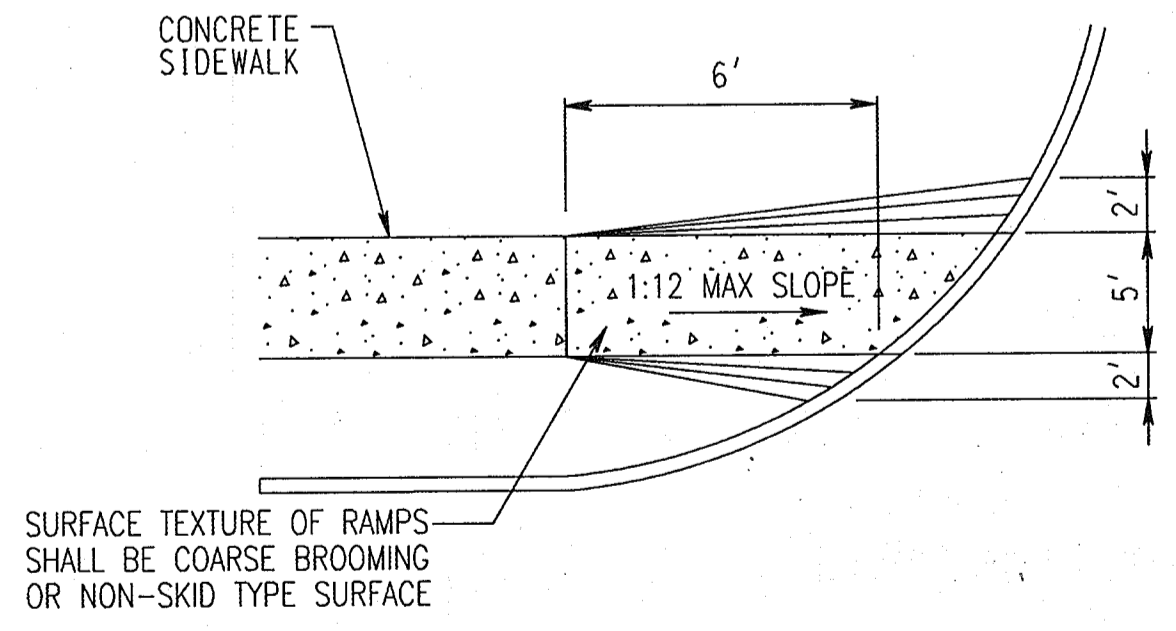
ELEVATION

HANDICAP RAMP
SCALE: NTS

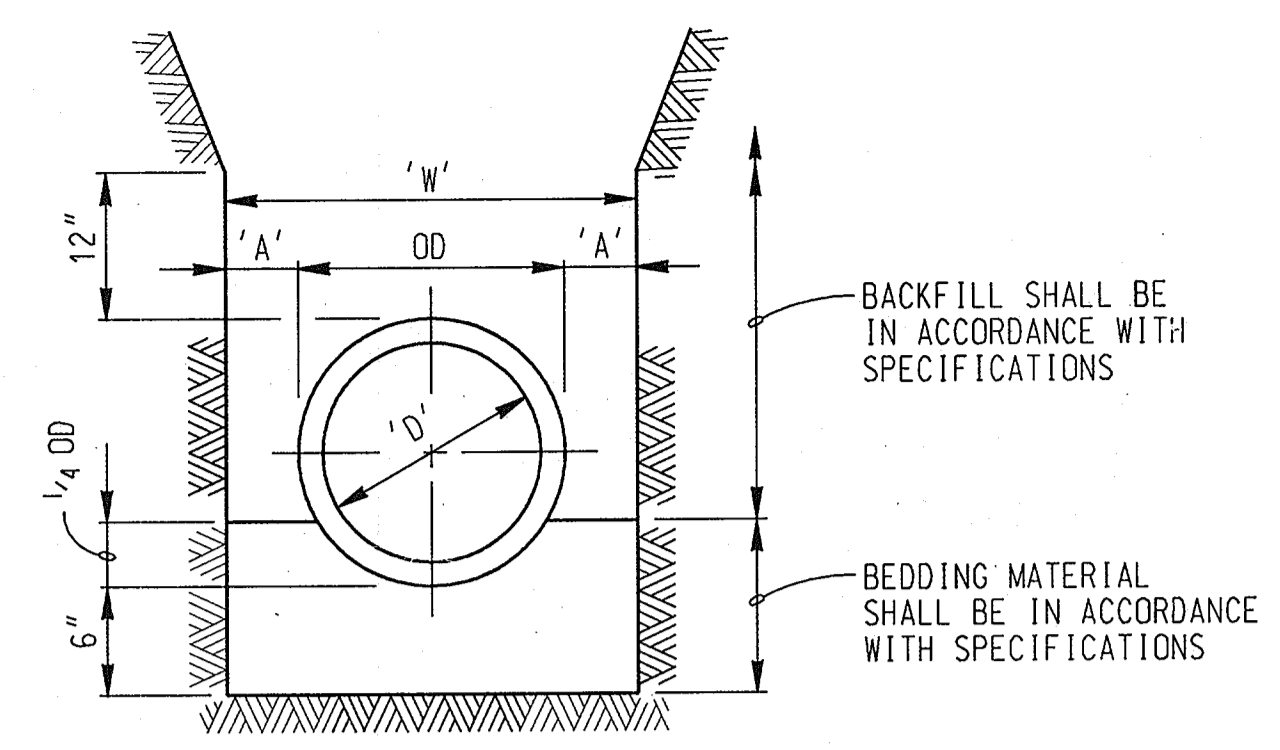


P-4 PAVEMENT

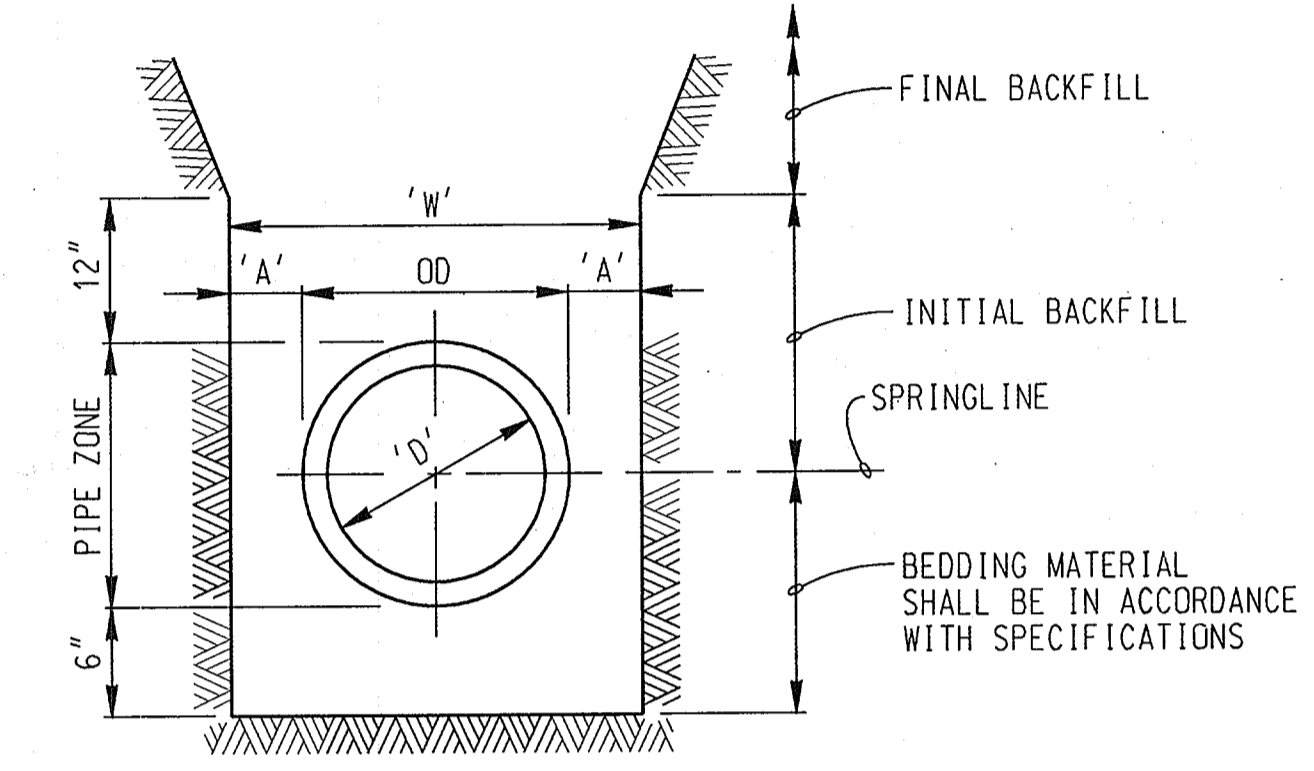
HOWARD COUNTY STANDARD PAVING DETAIL R-2.01
SCALE: N.T.S.



HANDICAP RAMP
SCALE: NTS



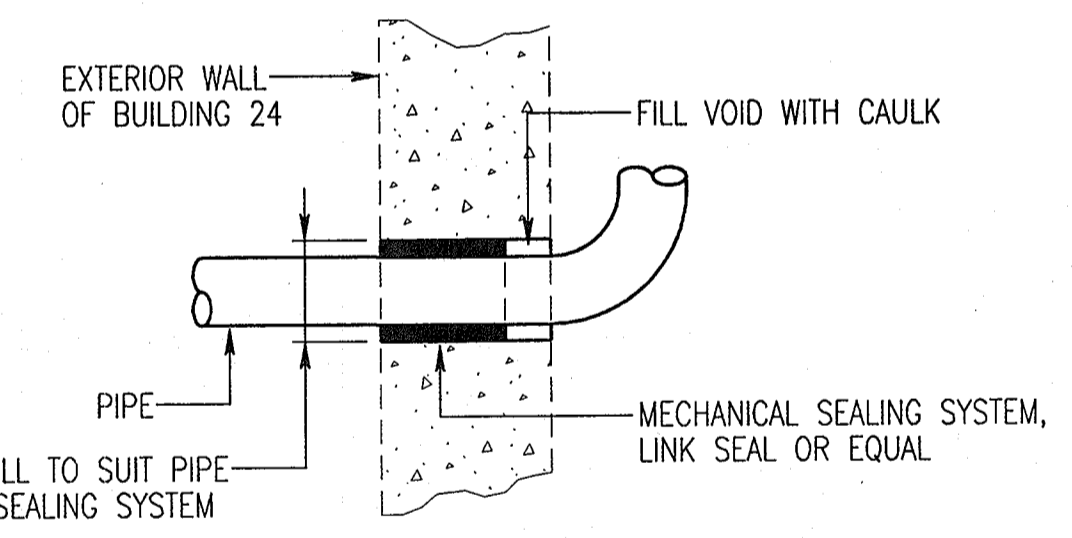
NON-PLASTIC PIPE



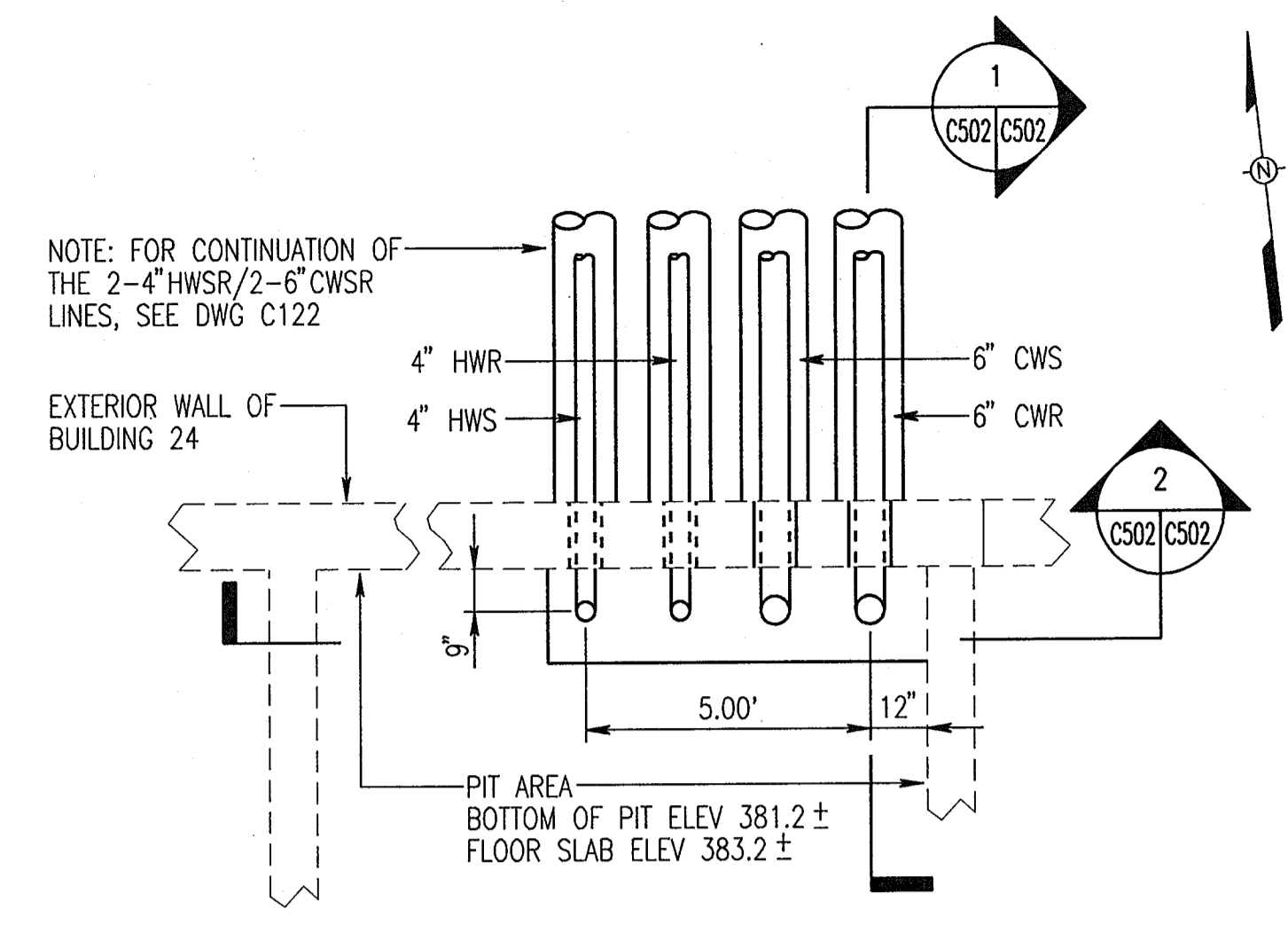
PLASTIC PIPE

PIPE DIAMETER 'D'	MAXIMUM 'A'
24" & UNDER	12"
OVER 24"	18"

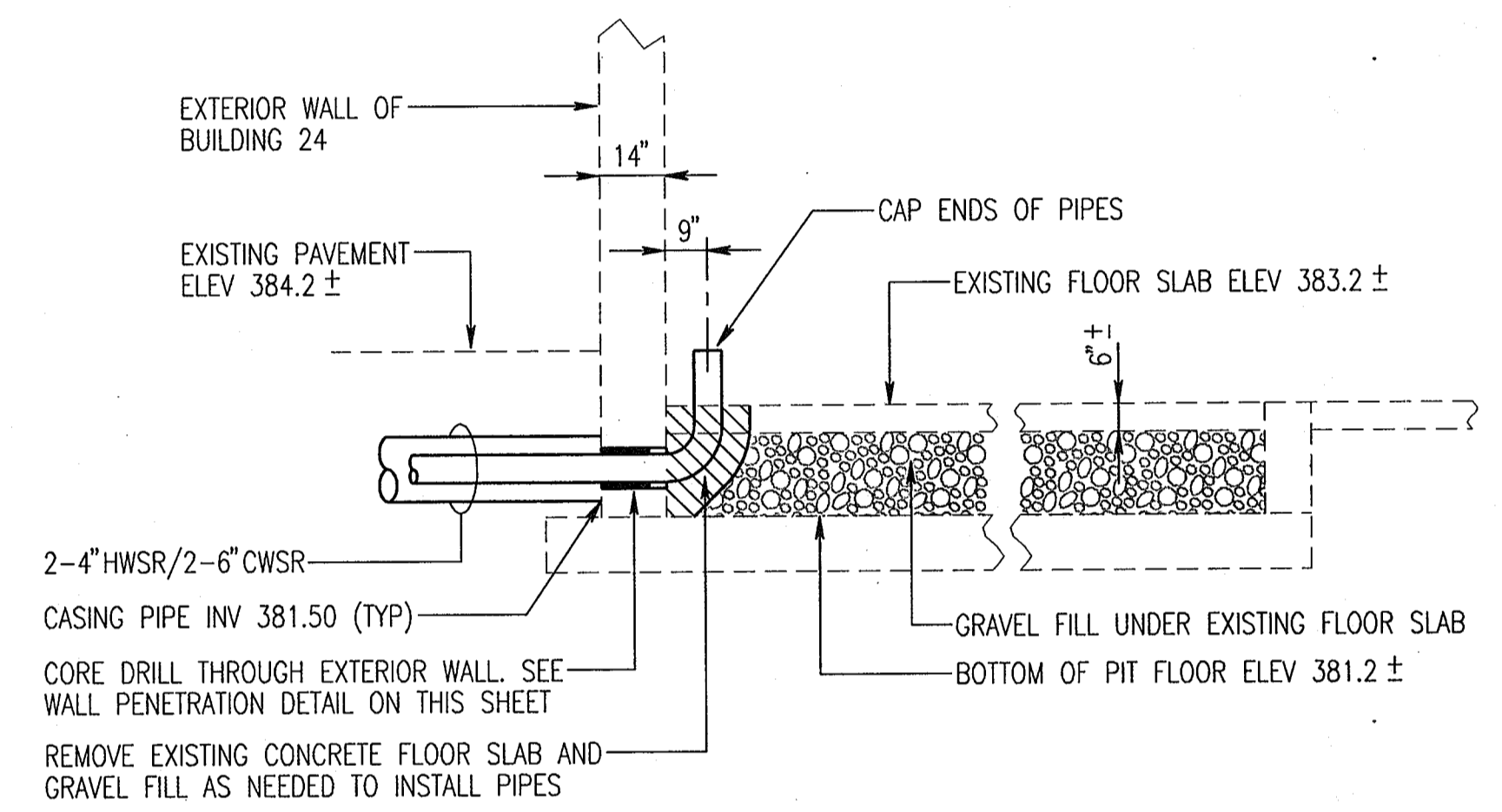
TRENCHING AND BEDDING
NOT TO SCALE



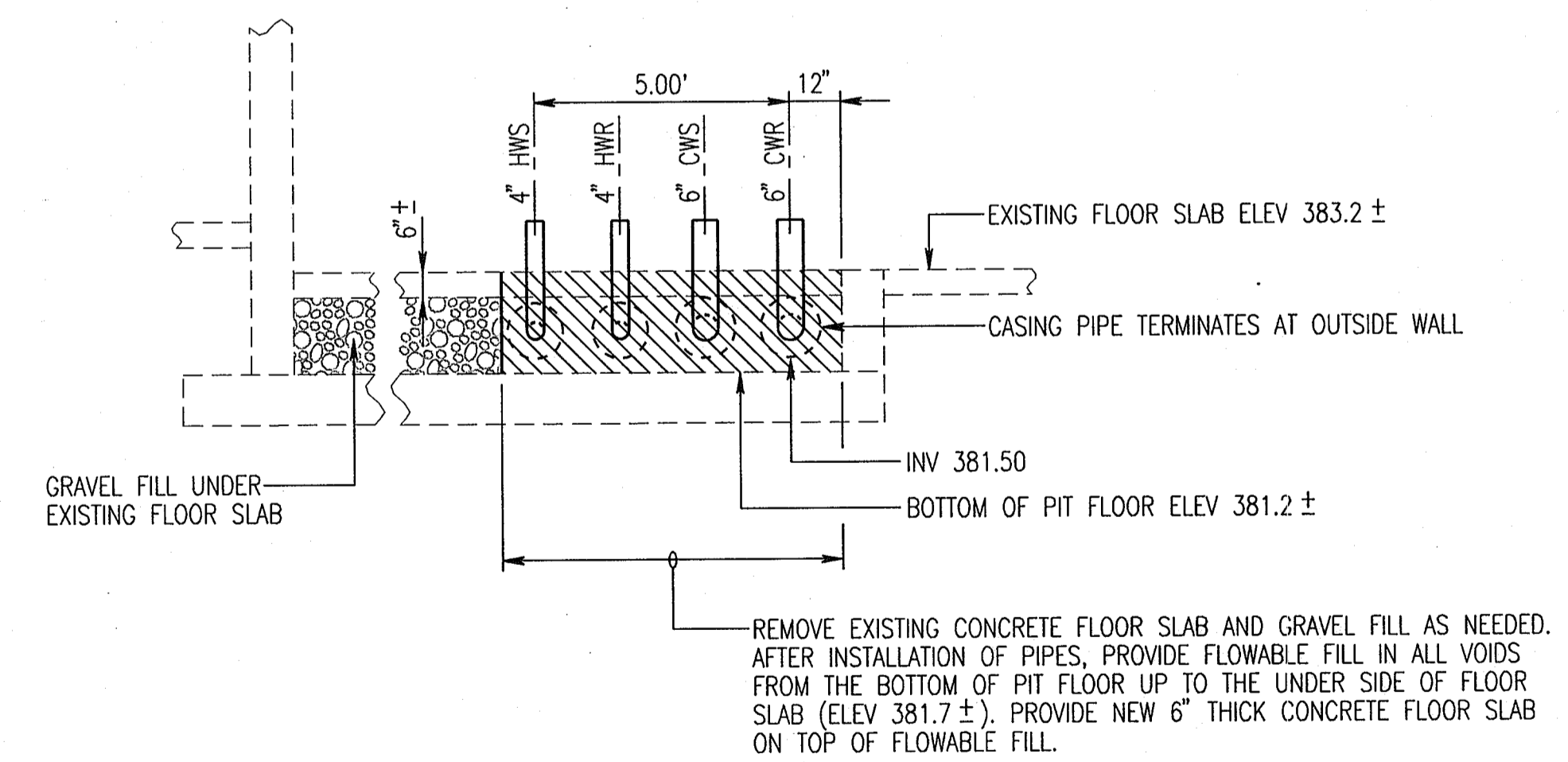
WALL PENETRATION
NOT TO SCALE



ENLARGED UTILITY PLAN AT BLDG 24
SCALE: NTS



SECTION 1
SCALE: NTS



SECTION 2
SCALE: NTS

ADD RETAINING WALL SHEETS	10/25/05
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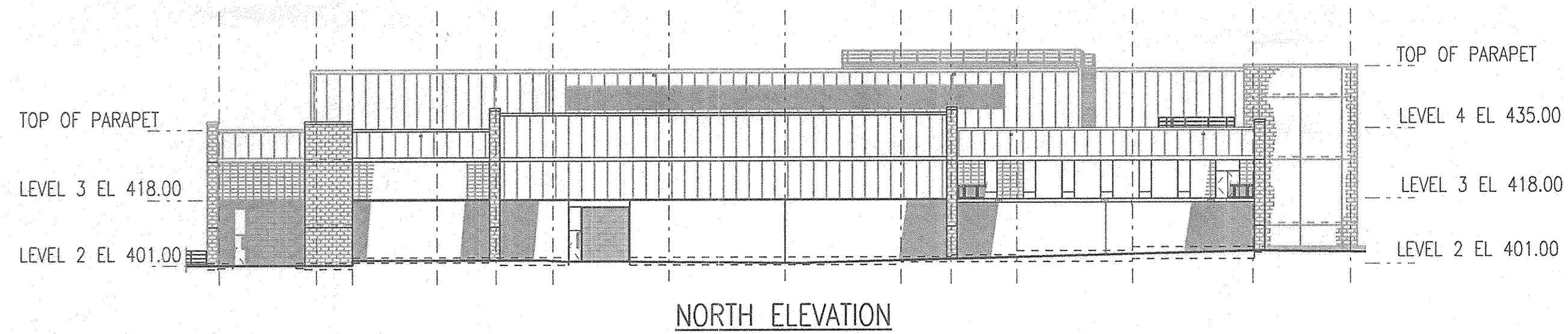


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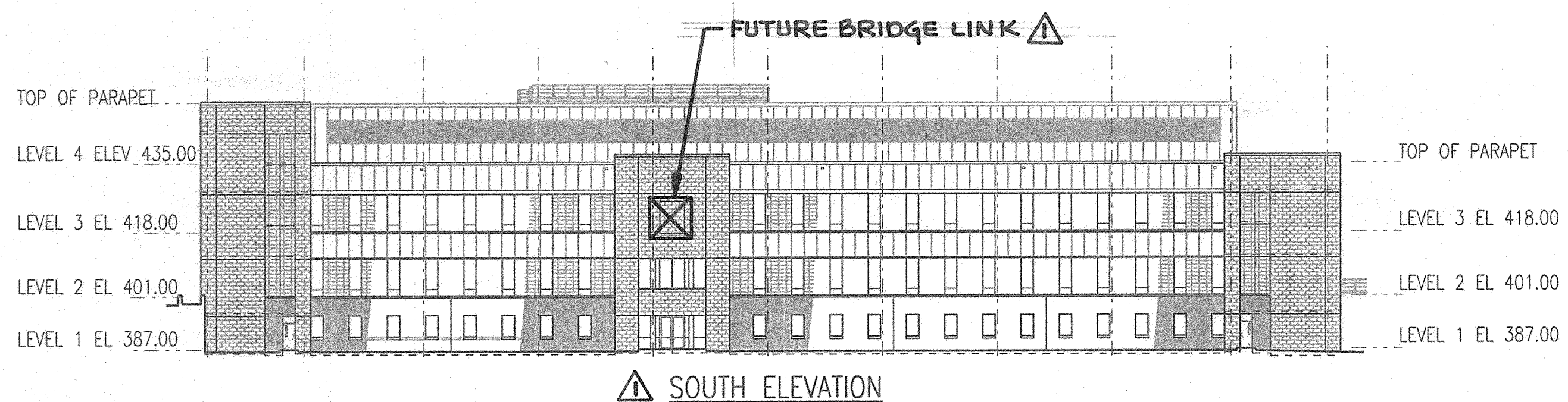
Sheet 57 of 77

Scale: AS SHOWN
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Checked By: A.U.O. Date: 03/25/05

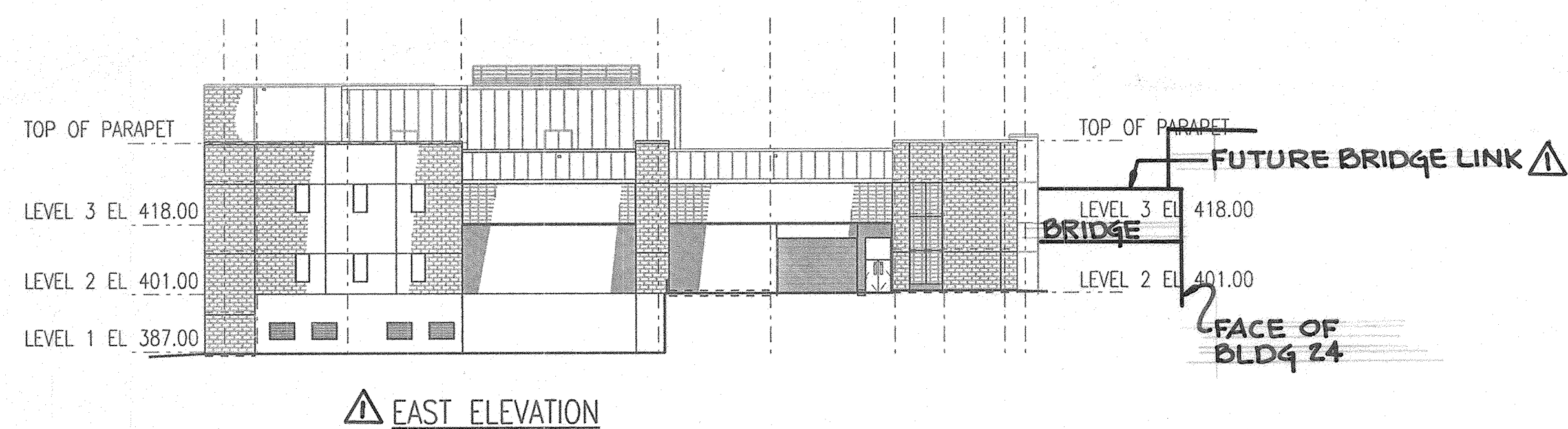
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 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 4/22/05
 CHIEF, DIVISION OF LAND DEVELOPMENT
 4/22/05
 DIRECTOR



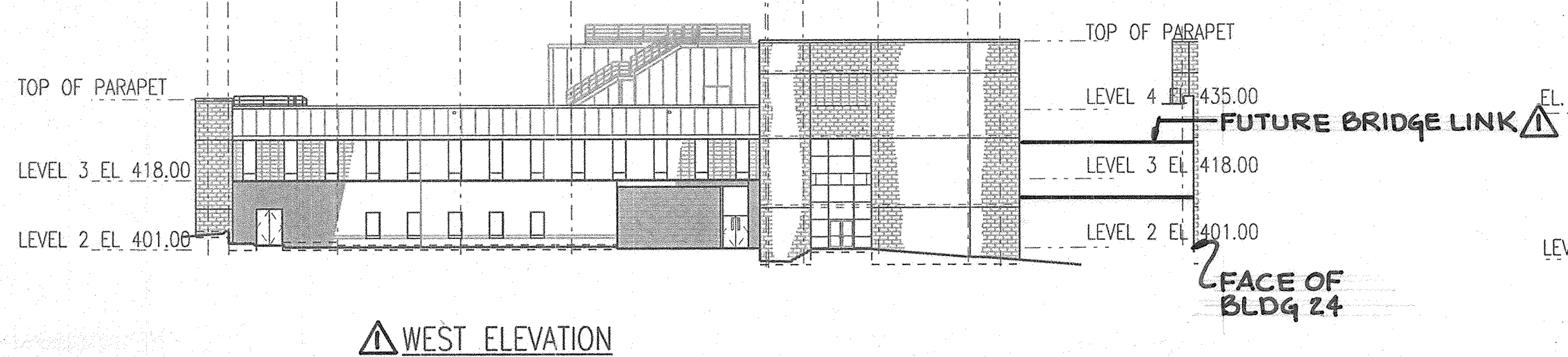
NORTH ELEVATION



△ SOUTH ELEVATION



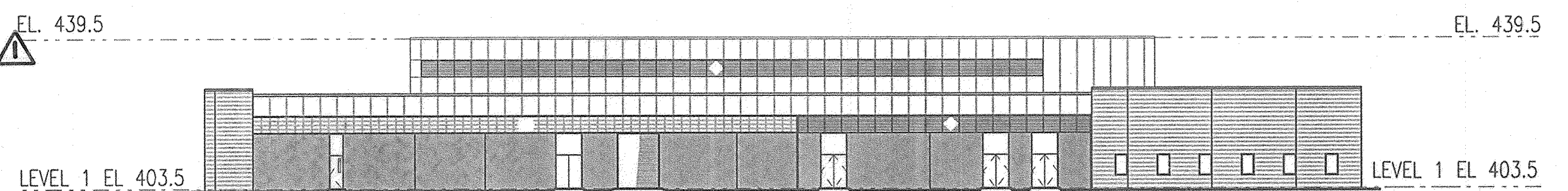
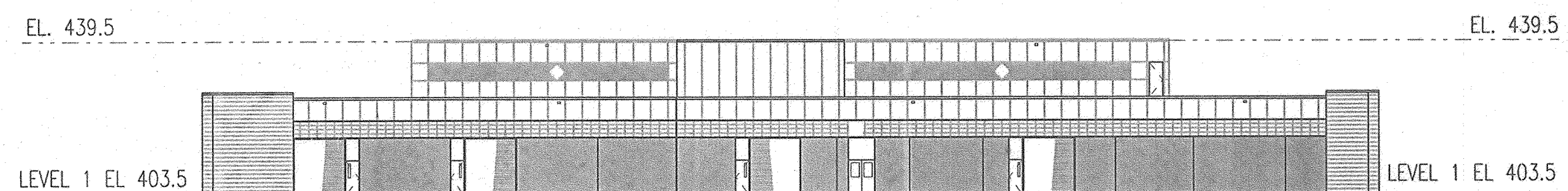
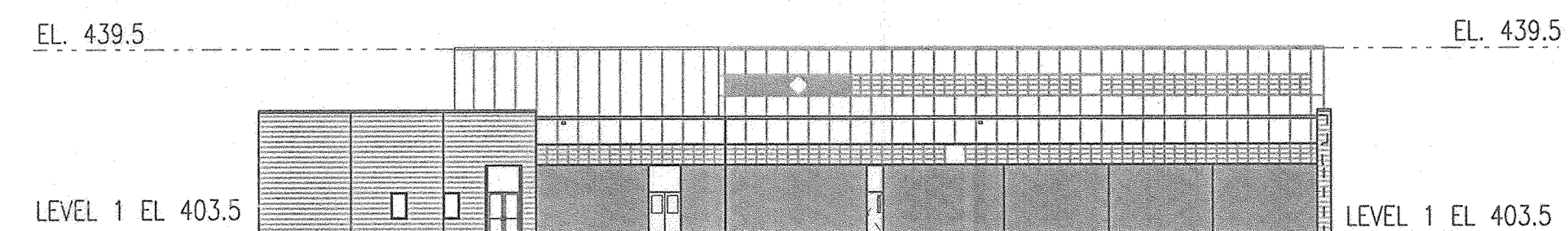
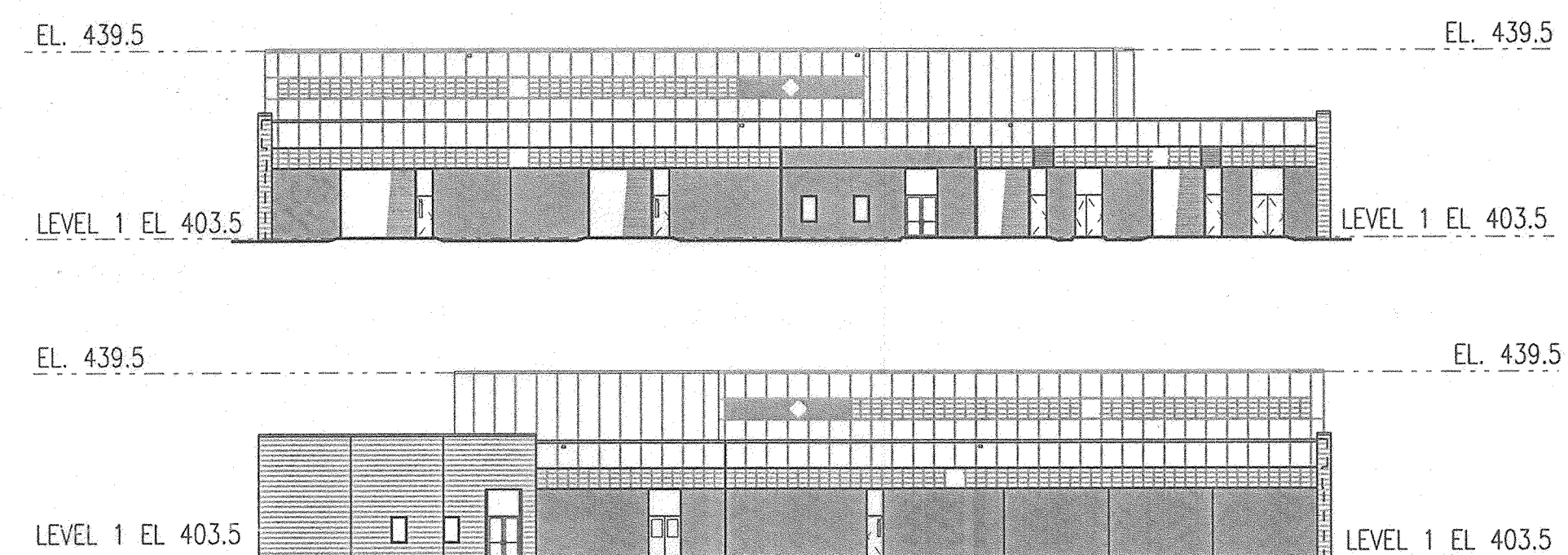
△ EAST ELEVATION



△ WEST ELEVATION

BUILDING 12 (SI-1) SCHEMATIC ELEVATIONS

SCALE: 1" = 30'



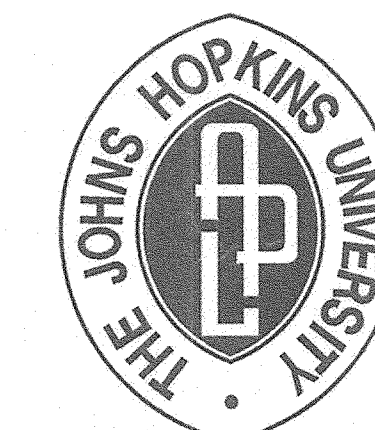
BUILDING 15 (SI-2) SCHEMATIC ELEVATIONS

SCALE: 1" = 30'

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 [Signature] 4/22/05
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FUTURE BRIDGE LINK 10/25/05	
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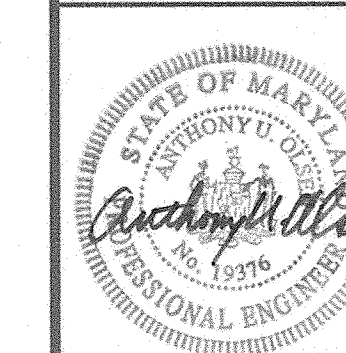
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Sheet 58 of 77

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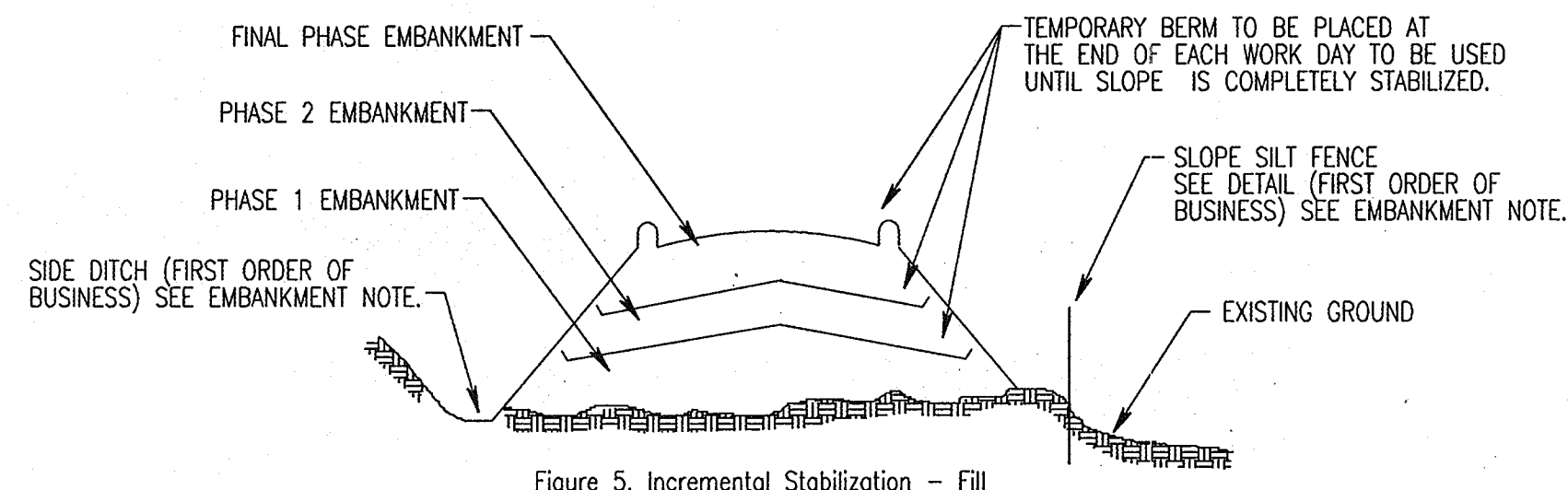


Figure 5. Incremental Stabilization - Fill

Section II - Temporary Seeding

Vegetation - annual grass or grain used to provide cover on disturbed areas for up to 12 months. For longer duration of vegetative cover, Permanent Seeding is required.

A. Seed Mixtures - Temporary Seeding

- i. See Howard County Seeding Notes on Sheet C602.

Section III: Permanent Seeding

Seeding grass and legumes to establish ground cover for a minimum period of one year on disturbed areas generally receiving low maintenance.

A. Seed Mixtures - Permanent Seeding

- i. See Howard County Seeding Notes on Sheet C601.

TABLE 24 MAINTENANCE FERTILIZATION FOR PERMANENT SEEDINGS

Use Soil Test Results or Rates Shown Below

Seeding Mixture	Type	lb/ac	lb/1000 sf	Time	Mowing
Tall fescue makes up 70% or more of cover	10-10-10 or 30-10-10	500	11.5	Yearly or as needed. Fall	Not closer than 3" if occasional mowing is desired.
Crownvetch Sericea Lespedeza Birdsfoot Trefoil	0-20-0	400	9.2	Spring, the year following establishment and every 4-5 years thereafter	Do not mow crownvetch
Fairly uniform stand of tall fescue and sericea lespedeza, or birdsfoot trefoil	5-10-10	500	11.5	Fall the year following establishment and every 4-5 years thereafter	Not required, no closer than 4" in the fall after seed has matured.
Weeping lovegrass & sericea lespedeza fairly uniform plant distribution.	5-10-10	500	11.5	Spring, the year following establishment and every 3-4 years thereafter	Not required, not closer than 4" in fall after seed has matured.
Red & chewing fescue, Kentucky bluegrass, hard fescue mixtures	20-10-10	250 100	5.8 2.3	September, 30 days later. December, May 20, June 30, if needed	Mow no closer than 2" for red fescue and K. bluegrass 3" for fescue.

Section IV - Sod: To provide quick cover on disturbed areas (2:1 grade or flatter).

A. General Specifications

- i. Class of turfgrass sod shall be Maryland or Virginia State Certified or Approved. Sod labels shall be made available to the job foreman and inspector.
- ii. Sod shall be machine cut at a uniform soil thickness of 3/4", plus or minus 1/4", at the time of cutting. Measurement for thickness shall exclude top growth and thatch. Individual pieces of sod shall be cut to the suppliers width and length. Maximum allowable deviation from standard widths and lengths shall be 5 percent. Broken pads and torn or uneven ends will not be acceptable.
- iii. Standard size sections of sod shall be strong enough to support their own weight and retain their size and shape when suspended vertically with a firm grasp on the upper 10 percent of the section.
- iv. Sod shall not be harvested or transplanted when moisture content (excessively dry or wet) may adversely affect its survival.
- v. Sod shall be harvested, delivered, and installed within a period of 36 hours. Sod not transplanted within this period shall be approved by an agronomist or soil scientist prior to its installation.

B. Sod Installation

- i. During periods of excessively high temperature or in areas having dry subsoil, the subsoil shall be lightly irrigated immediately prior to laying the sod.
- ii. The first row of sod shall be laid in a straight line with subsequent rows placed parallel to and tightly wedged against each other. Lateral joints shall be staggered to promote more uniform growth and strength. Ensure that sod is not stretched or overlapped and that all joints are butted tight in order to prevent voids which would cause air drying of the roots.
- iii. Wherever possible, sod shall be laid with the long edges parallel to the contour and with staggering joints. Sod shall be rolled and tamped, pegged or otherwise secured to prevent slippage on slopes and to ensure solid contact between sod roots and the underlying soil surface.
- iv. Sod shall be watered immediately following rolling or tamping until the underside of the new sod pad and soil surface below the sod are thoroughly wet. The operations of laying, tamping and irrigating for any piece of sod shall be completed within eight hours.

C. Sod Maintenance

- i. In the absence of adequate rainfall, watering shall be performed daily or as often as necessary during the first week and in sufficient quantities to maintain moist soil to a depth of 4". Watering should be done during the heat of the day to prevent wilting.
- ii. After the first week, sod watering is required as necessary to maintain adequate moisture content.
- iii. The first mowing of sod should not be attempted until the sod is firmly rooted. No more than 1/3 of the grass leaf shall be removed by the initial cutting or subsequent cuttings. Grass height shall be maintained between 2" and 3" unless otherwise specified.

SECTION IV - TURFGRASS ESTABLISHMENT

Areas where turfgrass may be desired include lawns, parks, playgrounds, and commercial sites which will receive a medium to high level of maintenance. Areas to receive seed shall be tilled by disking or other approved methods to a depth of 2 to 4 inches, leveled and raked to prepare a proper seedbed. Stones and debris over 1 1/2 inches in diameter shall be removed. The resulting seedbed shall be in such condition that future mowing of grasses will pose no difficulty.

NOTE: Choose certified material. Certified material is the best guarantee of cultivar purity. The certification program of the Maryland Department of Agriculture, Turf and Seed Section, provides a reliable means of consumer protection and assures a pure genetic line.

A. Turfgrass Mixtures

- i. Kentucky Bluegrass - Full sun mixture - For use in areas that receive intensive management. Irrigation required in the areas of central Maryland and eastern shore. Recommended Certified Kentucky Bluegrass Cultivars Seeding Rate: 1.5 to 2.0 pounds/1000 square feet. A minimum of three bluegrass cultivars should be chosen ranging from a minimum of 10% to a maximum of 35% of the mixture by weight.
- ii. Kentucky Bluegrass/Perennial Rye - Full sun mixture - For use in full sun areas where rapid establishment is necessary and when turf will receive medium to intensive management. Certified Perennial Ryegrass Cultivars/Certified Kentucky Bluegrass Seeding rate: 2 pounds mixture/1000 square feet. A minimum of 3 Kentucky Bluegrass Cultivars must be chosen, with each cultivar ranging from 10% to 35% of the mixture by weight.
- iii. Tall Fescue/Kentucky Bluegrass - Full sun mixture - For use in drought prone areas and/or far areas receiving low to medium management in full sun to medium shade. Recommended mixture includes: certified Tall Fescue Cultivars 95 - 100%, certified Kentucky Bluegrass Cultivars 0 - 5%. Seeding rate: 5 to 8 lb/1000 sf. One or more cultivars may be blended.
- iv. Kentucky Bluegrass/Fine Fescue - Shade Mixture - For use in areas with shade in Bluegrass lawns. For establishment in high quality, intensively managed turf area. Mixture includes: certified Kentucky Bluegrass Cultivars 30-40% and certified Fine Fescue and 60-70%. Seeding rate: 1 1/2 - 3 lbs/1000 square feet. A minimum of 3 Kentucky bluegrass cultivars must be chosen, with each cultivar ranging from a minimum of 10% to a maximum of 35% of the mixture by weight.

NOTE: Turfgrass varieties should be selected from those listed in the most current University of Maryland Publication, Agronomy Mimeo #77, "Turfgrass Cultivar Recommendations for Maryland".

B. Ideal times of seeding

- Western MD: March 15 - June 1, August 1 - October 1 (Hardiness Zones - 5b, 6a)
- Central MD: March 1 - May 15, October 15 (Hardiness Zone - 6b)
- Southern MD, Eastern Shore: March 1 - May 15, August 15 - October 15 (Hardiness Zones - 7a, 7b)

C. Irrigation

If soil moisture is deficient, supply new seedlings with adequate water for plant growth (1/2" - 1" every 3 to 4 days depending on soil texture) until they are firmly established. This is especially true when seedlings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites.

D. Repair and Maintenance

- Inspect all seeded areas for failures and make necessary repairs, replacements, and reseeding within the planting season.
- i. Once the vegetation is established, the site shall have 95% groundcover to be considered adequately stabilized.
- ii. If the stand provides less than 40% ground coverage, reestablish following original lime, fertilizer, seedbed preparation and seeding recommendations.
- iii. If the stand provides between 40% and 94% ground coverage, overseeding and fertilizing using half of the rates originally applied may be necessary.
- iv. Maintenance fertilizer rates for permanent seedings are shown in Table 24. For lawns and other medium to high maintenance turfgrass areas, refer to the University of Maryland publication "Lawn Care in Maryland" Bulletin No.171.

20.0 STANDARDS AND SPECIFICATIONS

FOR
TOPSOIL

Definition

Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.

Purpose

To provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

Conditions Where Practice Applies

- i. This practice is limited to areas having 2.1 or flatter slopes where:
 - a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
 - b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
 - c. The original soil to be vegetated contains materials toxic to plant growth.
 - d. The soil is so acidic that treatment with limestone is not feasible.
- ii. For the purpose of these Standards and Specifications, areas having slopes steeper than 2.1 require special consideration and design for adequate stabilization. Areas having slopes steeper than 2.1 shall have the appropriate stabilization shown on the plans.

Construction and Material Specifications

- i. Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-SCS in cooperation with Maryland Agricultural Experimental Station.
- ii. Topsoil Specifications - Soil to be used as topsoil must meet the following:
 - i. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textured subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1-1/2" in diameter.
 - ii. Top soil must be free of plants or plant parts such as Bermuda grass, quackgrass, Johnsongrass, nutsedge, poison ivy, thistle, or others as specified.
 - iii. Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.
- iii. For sites having disturbed areas under 5 acres:
 - i. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.
- iv. For sites having disturbed areas under 5 acres:
 - i. On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
 - a. pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.
 - b. Organic content of topsoil shall not be less than 1.5 percent by weight.
 - c. Topsoil having soluble salt content greater than 500 parts per million shall not be used.
 - d. No sod or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phytotoxic materials.

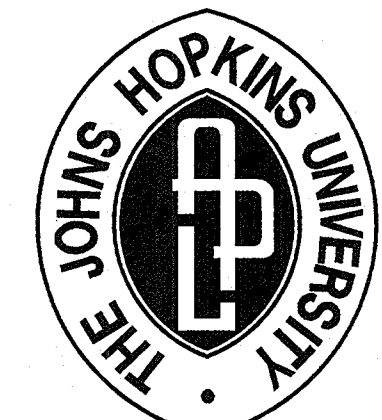
Note: Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.

- ii. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.
- V. Topsoil Application
 - i. When topsoiling, maintain needed erosion and sediment control practices such as diversions, Grade Stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins.
 - ii. Grades on the areas to be topsoiled, which have been previously established, shall be maintained, albeit 4" - 8" higher elevation.
 - iii. Topsoil shall be uniformly distributed in a 4" - 8" layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected to prevent the formation of depressions or water pocket.
 - iv. Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparations.
- vi. Alternative for Permanent Seeding - Instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below:
 - i. Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for sites having disturbed areas under 5 acres shall conform to the following requirements.
 - a. Composted sludge shall be supplied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06.
 - b. Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have Ph of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.
 - c. Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.
 - v. Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4lb/1,000 square feet, and 1/3 the normal lime application rate.

References: Guideline Specifications, Soil Preparation and Sodding. MD-VA, Pub #1, Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institutes. Revised 1973.

ADD RETAINING WALL SHEETS	10/25/05
G BID SET	3/24/05

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LAUREL MARYLAND 20723-6099



SYSTEMS INTEGRATION BUILDINGS AND VAN PAD

SDP SET

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GRAPHIC SCALES

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WHITMAN, REQUARDT AND ASSOCIATES, LLP
801 S. CAROLINE STREET
BALTIMORE, MARYLAND 21231
410 - 235 - 3450

EROSION AND SEDIMENT CONTROL NOTES B

DRAWING NO.	
C603	
Sheet 61 of 77	
Scale:	NO SCALE
Designed By: R.B.C.	Drawn By: C.J.K.
Checked By: A.U.O.	Date: 03/25/05

ENGINEER'S CERTIFICATE
*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 REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

Anthony U. Olson 3/29/05
SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE) DATE

DEVELOPER'S CERTIFICATE
*I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF 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 SOIL CONSERVATION DISTRICT.

James E. Loeck 3/30/05
SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE) DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chris Dammann 4/20/05
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE

Chris Kamath 4/23/05
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

W. H. Long, Jr. 4/24/05
DIRECTOR DATE

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

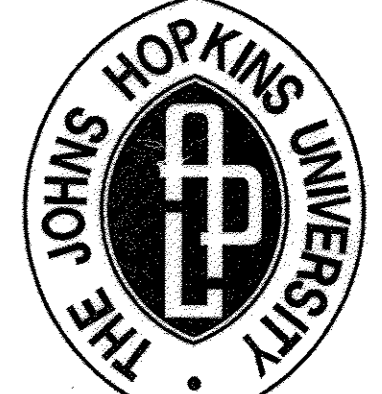
Jim Meyer 4/14/05
USDA-Natural Resources Conservation Service DATE

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

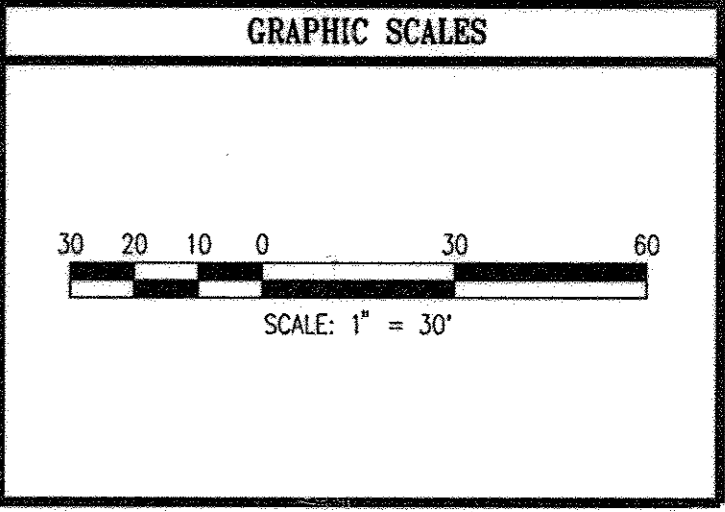
John Selby 4/14/05
HOWARD S.C.D. DATE

ADD RETAINING WALL SHEETS	10/25/05
G BID SET	3/24/05

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THE JOHNS HOPKINS UNIVERSITY

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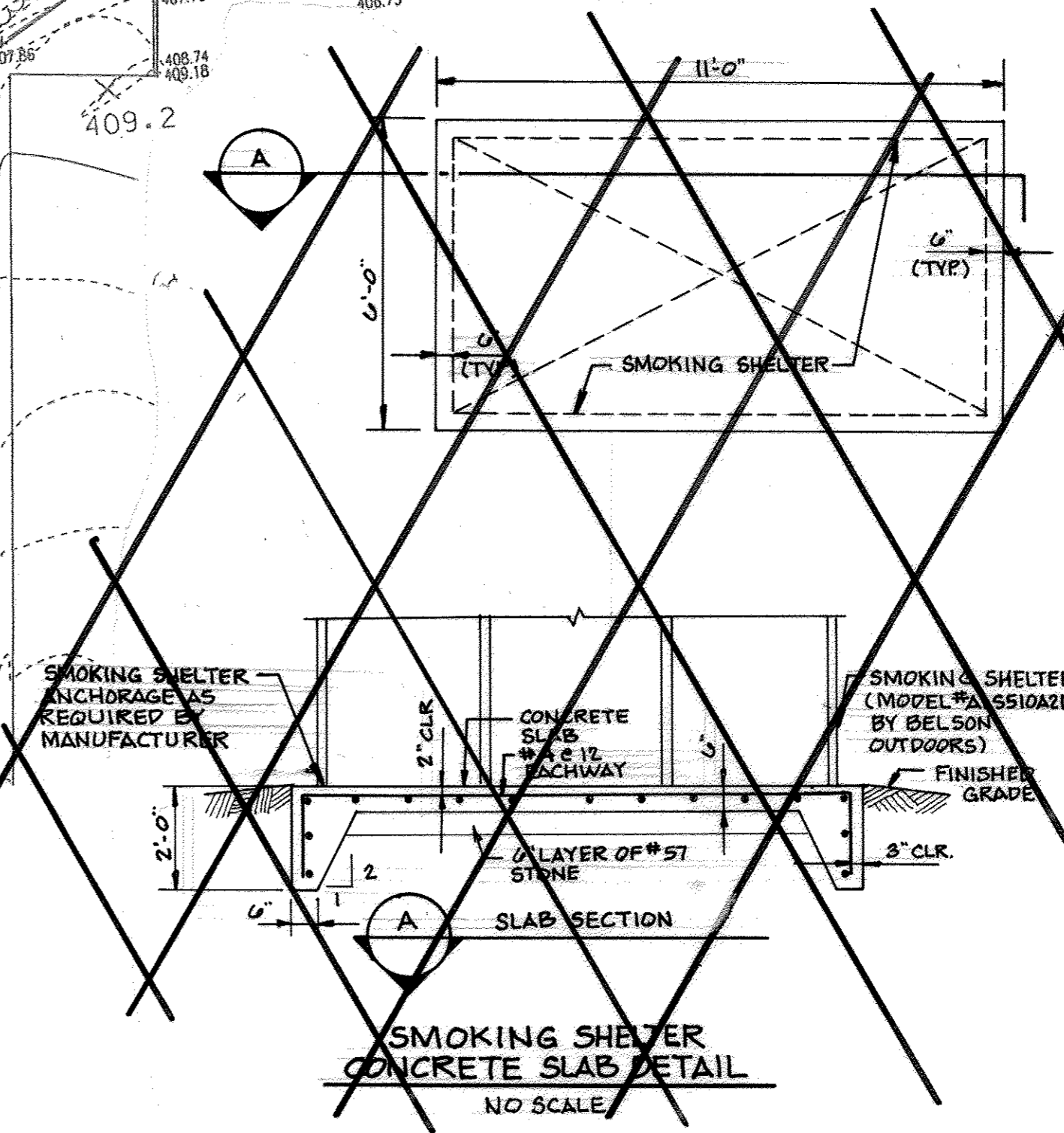
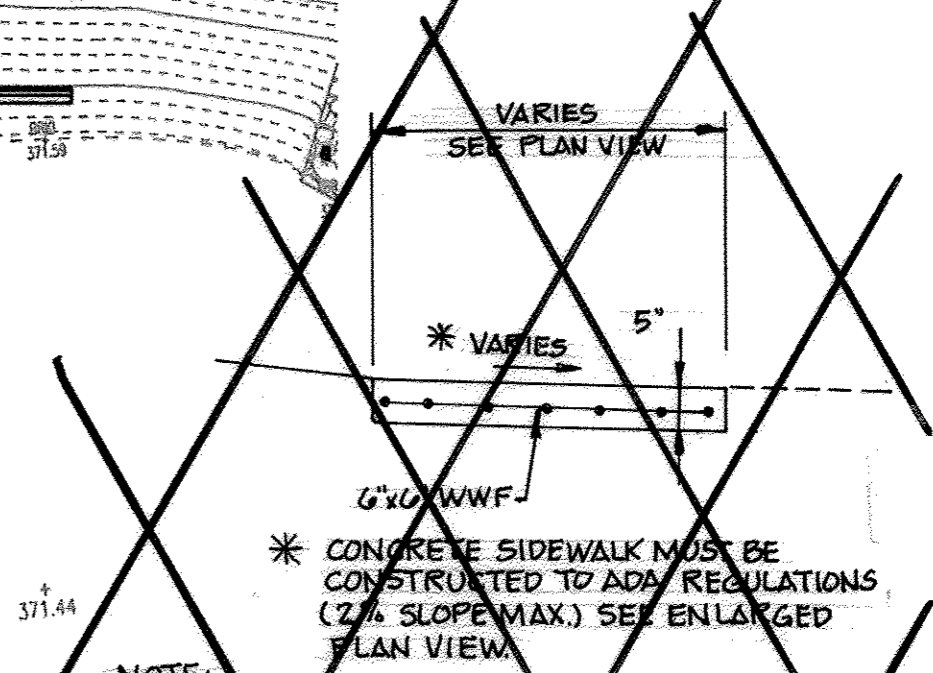
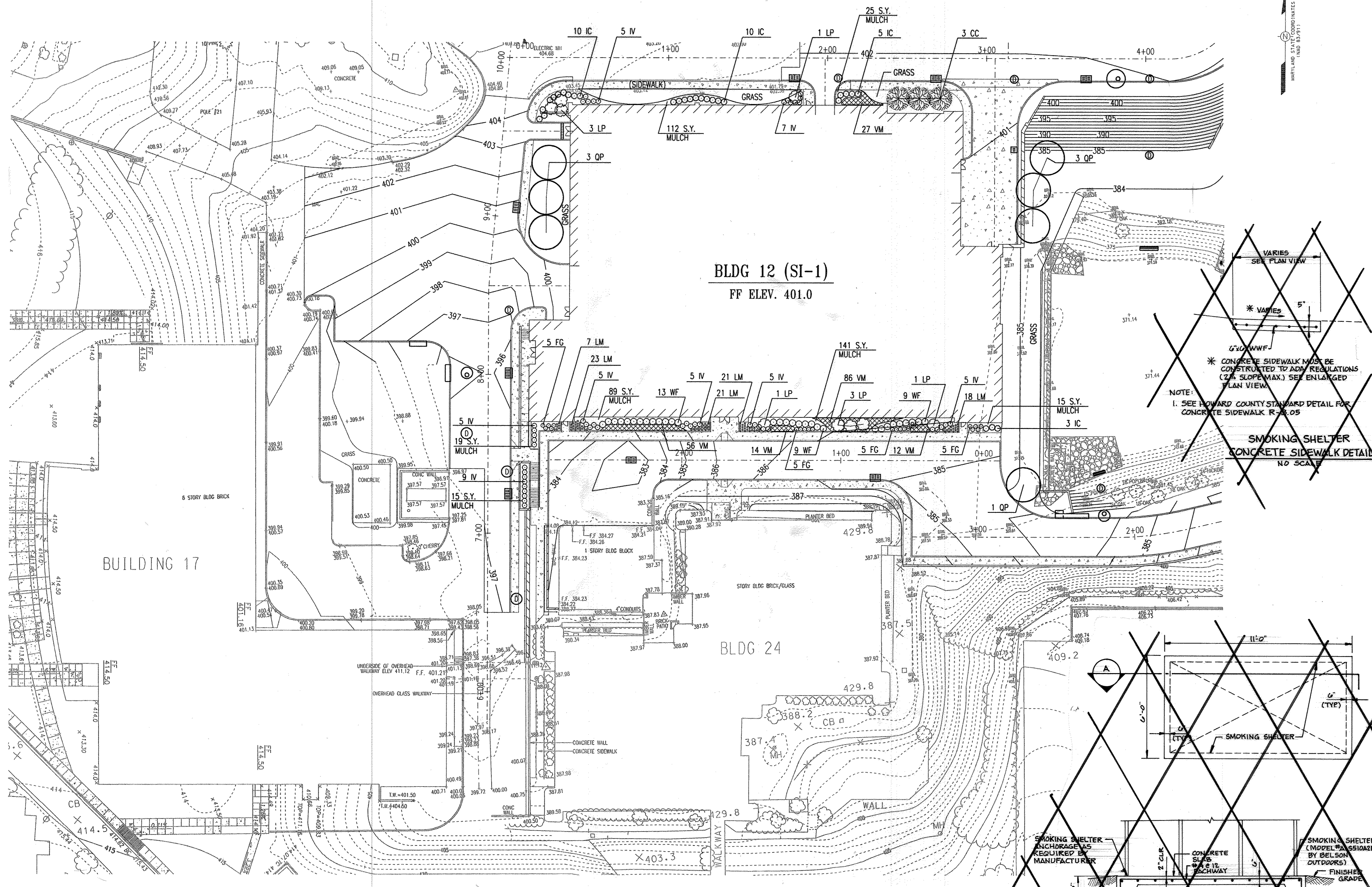
LANDSCAPE PLAN

DRAWING NO. **L101**

Sheet 62 of 64

Scale: 1" = 30'

Designed By: H.W.P. Drawn By: S.A.Z.
 Checked By: A.U.O. Date: 03/25/05



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chad Dammann 4/20/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE

Cindy Hamant 4/20/05
 CHIEF, DIVISION OF LAND DEVELOPMENT DP DATE

David L. Coyle 4/22/05
 DIRECTOR DATE

ADD RETAINING WALL SHEETS	10/25/05
G BID SET	3/24/05

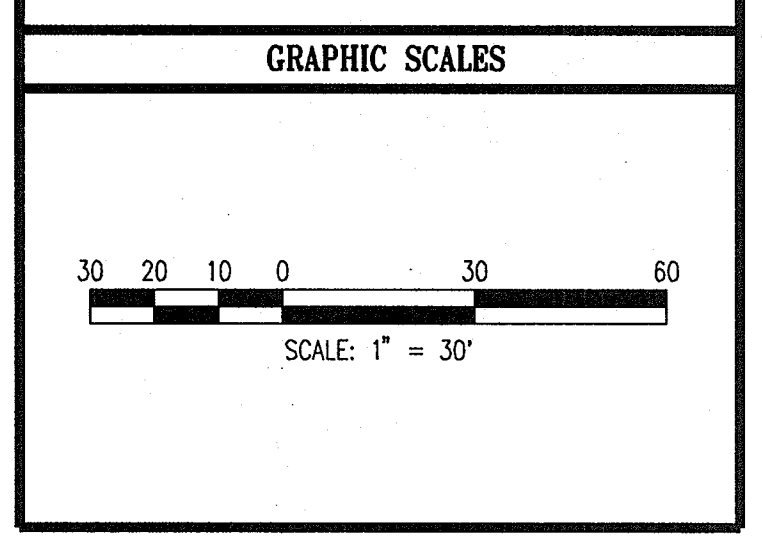
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 LAUREL MARYLAND 20723-6099



SYSTEMS INTEGRATION BUILDINGS AND VAN PAD

SDP SET

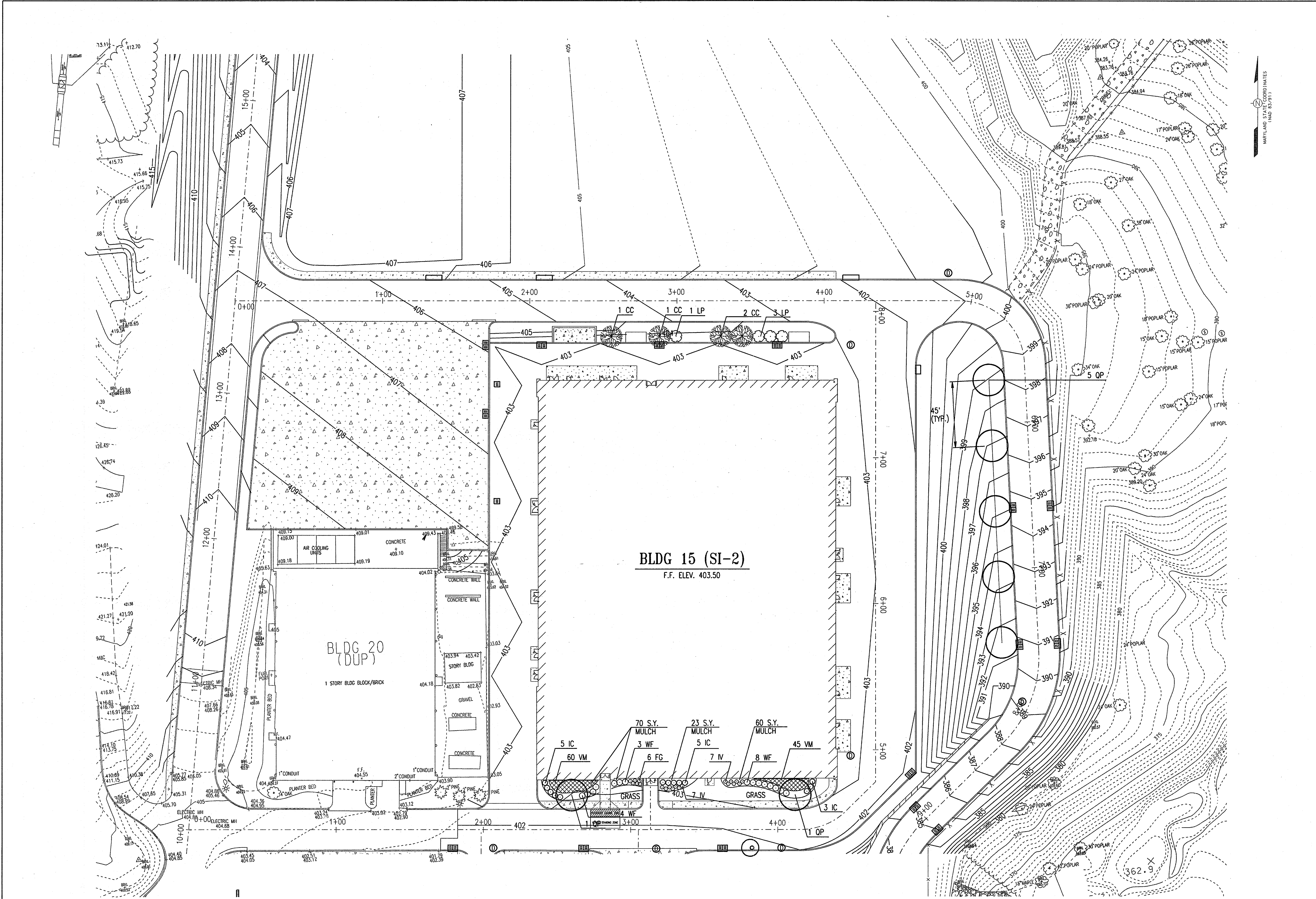
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LANDSCAPE PLAN

	DRAWING NO.
	L102
	Sheet 63 of 77
Scale: 1"=30'	
Designed By: H.W.P.	Drawn By: S.A.Z.
Checked By: A.U.O.	Date: 03/25/05



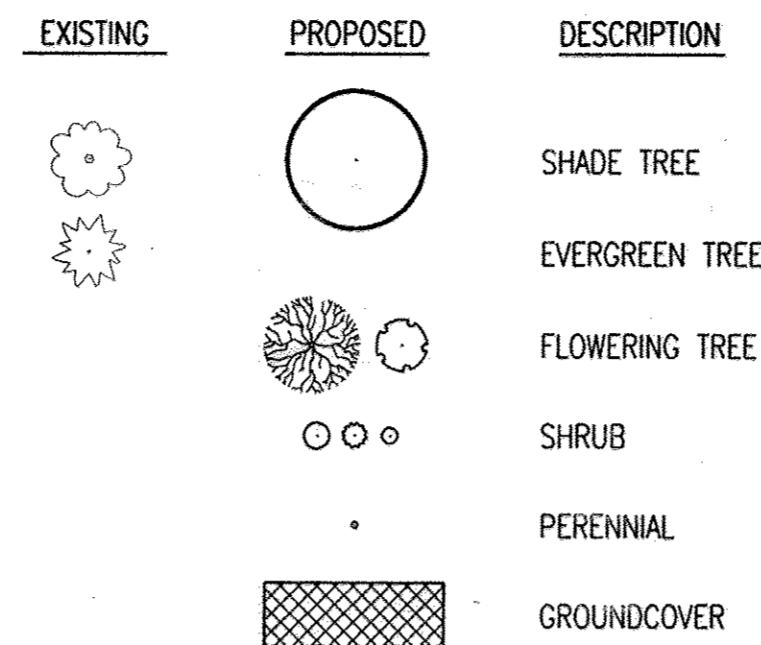
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

	4/20/05
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
	4/22/05
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
	4/24/05
DIRECTOR	DATE

LANDSCAPE PLANTING SCHEDULE

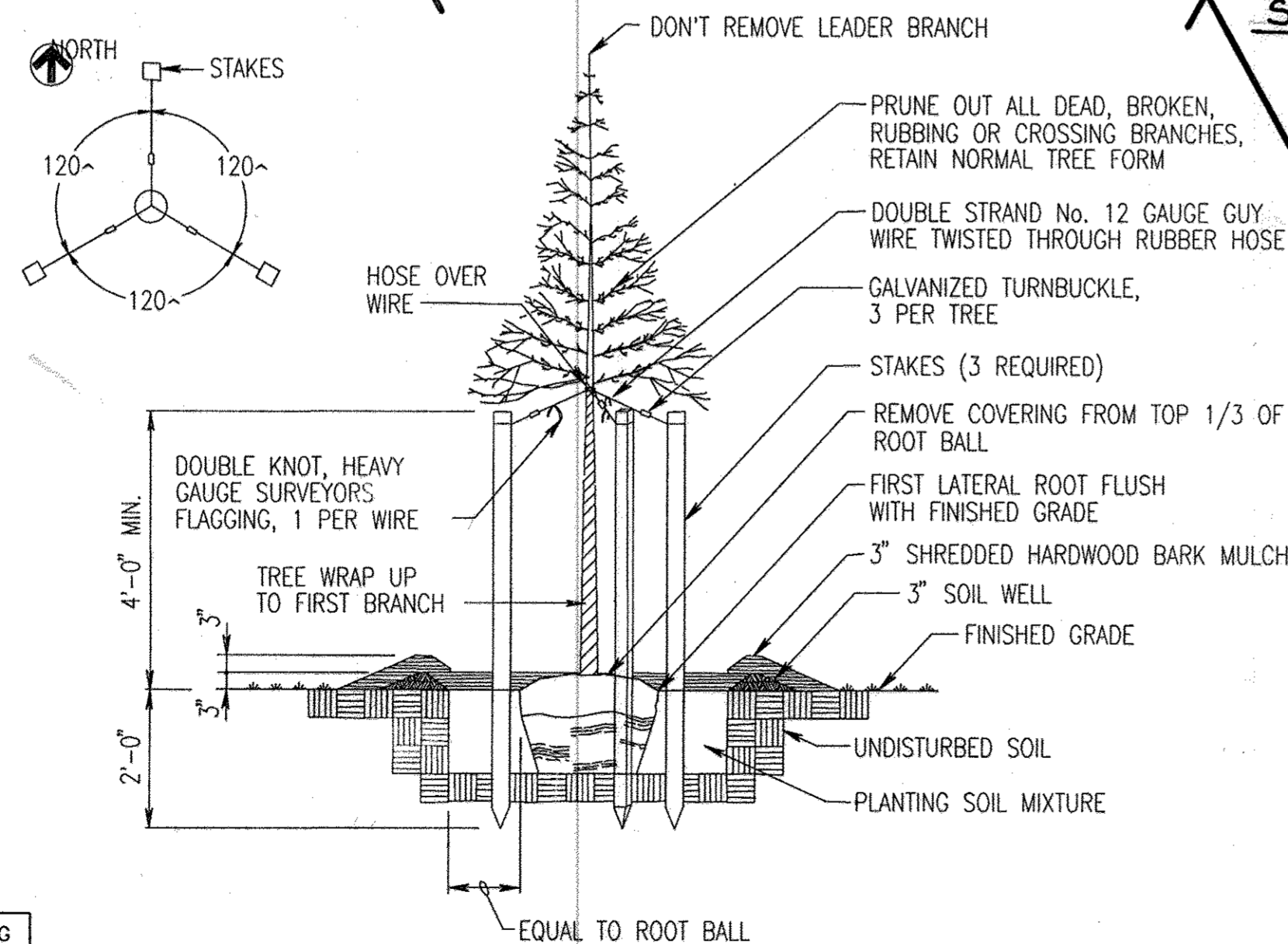
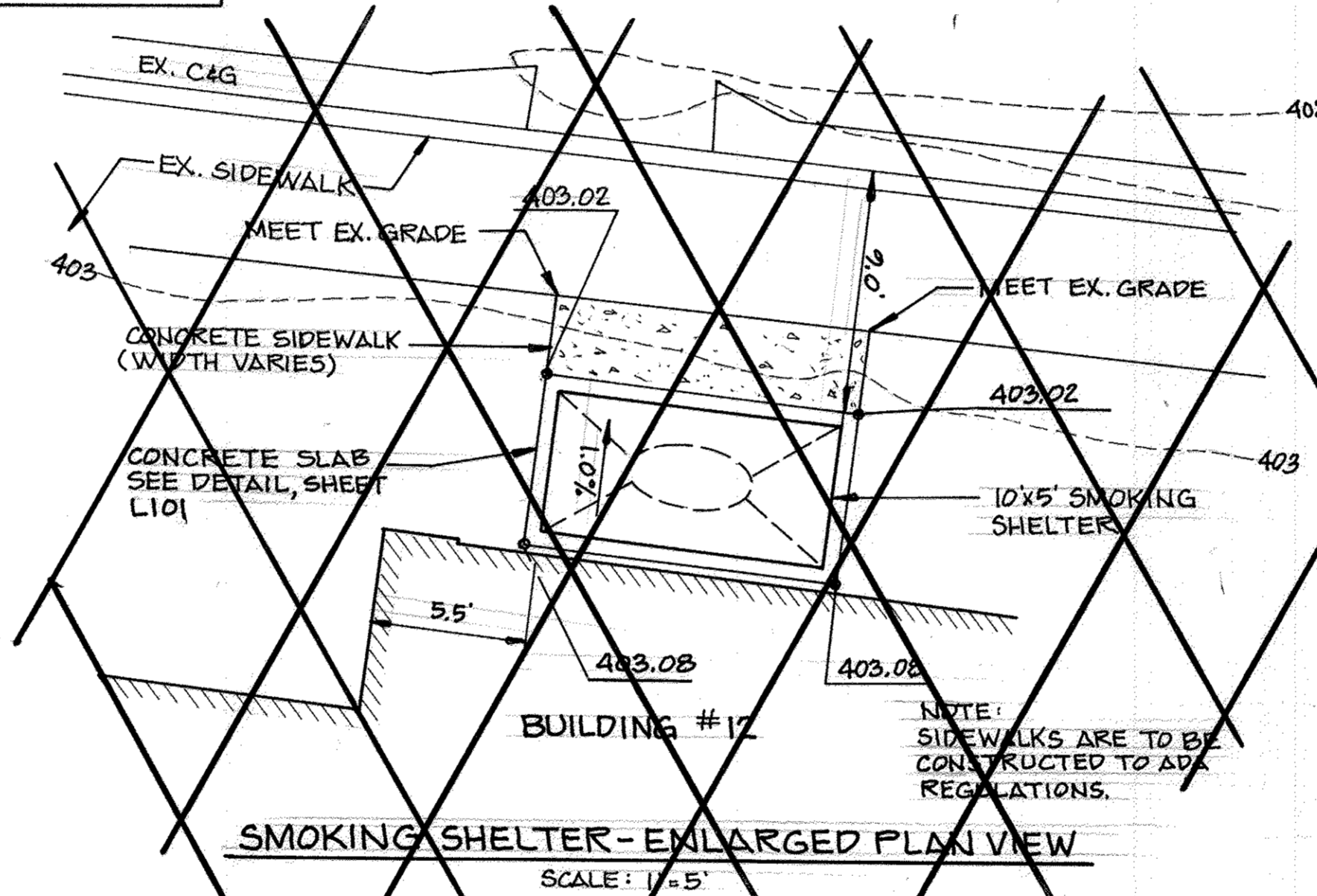
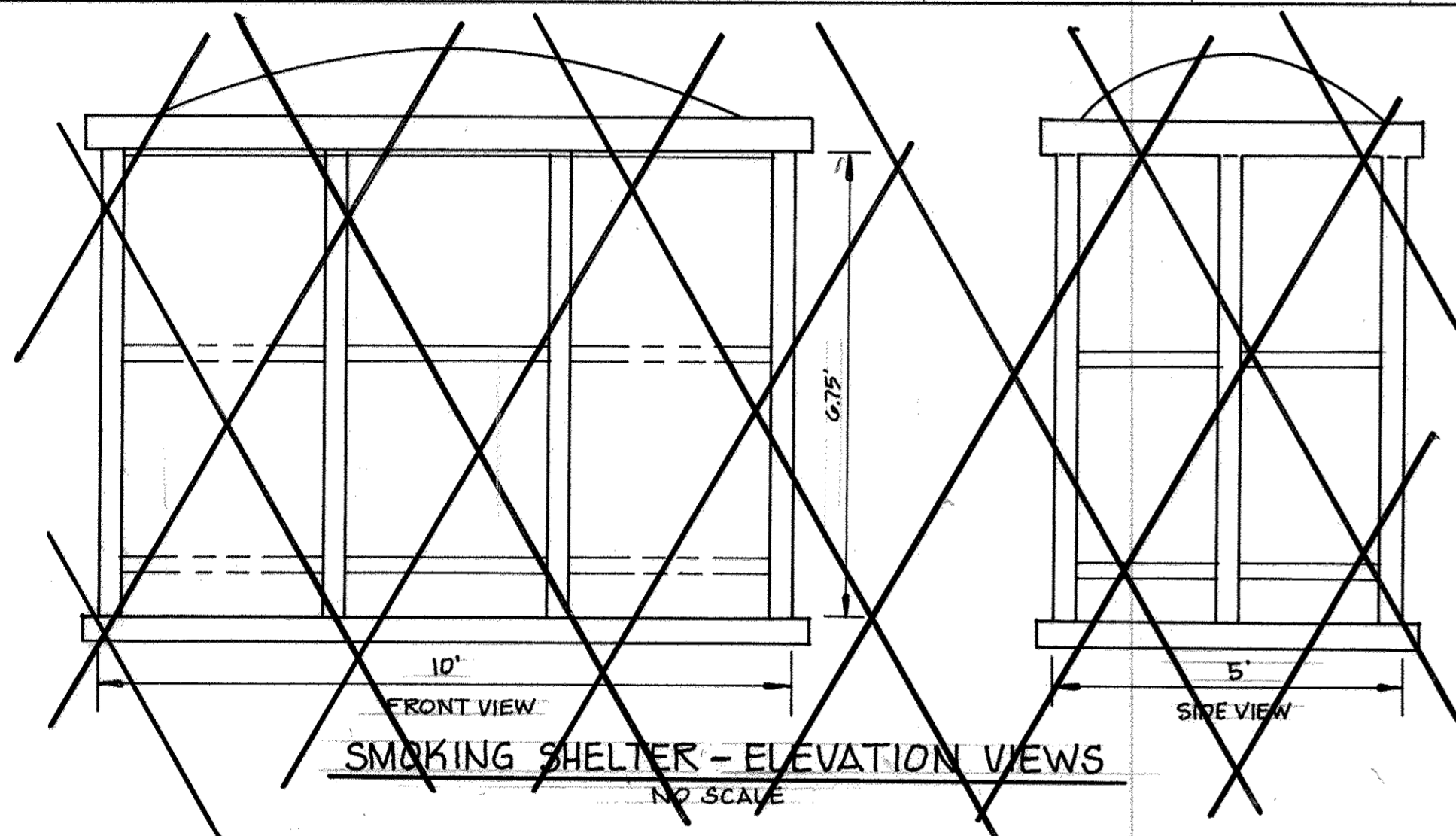
KEY	QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE	METHOD	COMMENTS
TREES						
CC	7	CERCIS CANADENSIS	EASTERN REDBUD	1.75" TO 2" CAL.	B&B	-
LP	13	LAGERSTROEMIA INDICA X FAURIEI 'PECOS'	PECOS CRAPEMYRTLE	# 7 CONT.	CONT.	PLANT 8' APART
QP	14	QUERCUS PHELLOS	WILLOW OAK	2.5" TO 3" CAL.	B&B	-
SHRUBS						
FG	26	FOTHERGILLA GARDENII	DWARF FORTHERGILLA	18" - 24" HEIGHT	# 3 CONT.	-
IC	41	ILEX CRENATA 'ANGELICA'	ANGELICA JAPANESE HOLLY	24" - 30" HEIGHT	B&B	-
IV	60	ITEA VIRGINICA 'SPRICH'	LITTLE HENRY SWEETSPICE	# 2 CONT.	CONT.	-
WF	46	WEIGELA FLORIDA 'VARIEGATA NANA'	DWARF VARIEGATED WEIGELA	3' - 4' HEIGHT	B&B	-
PERENNIAL						
LM	90	LIRIOPE MUSCARI 'BIG BLUE'	BIG BLUE LILYTURF	4" POTS		PLANT 18" APART
GROUNDCOVER						
VM	300 (6 FLATS)	VINCA MINOR	COMMON PERIWINKLE (MYRTLE)	2 1/2" PEAT POTS 50 PER FLAT	FLAT	PLANT 6" APART

LEGEND

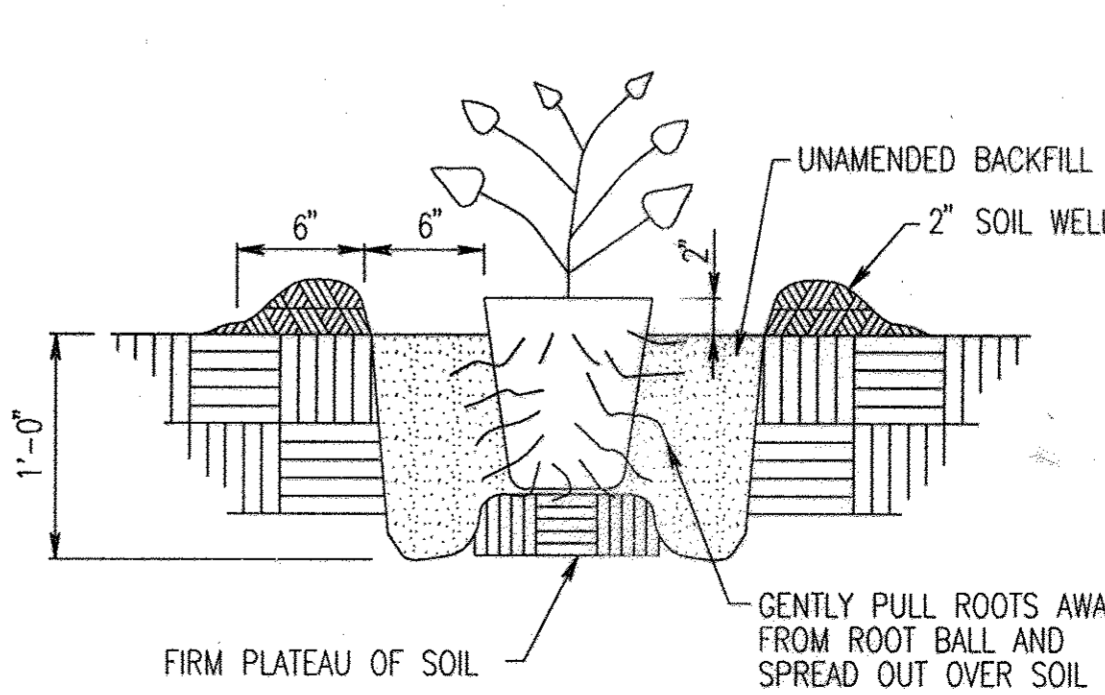
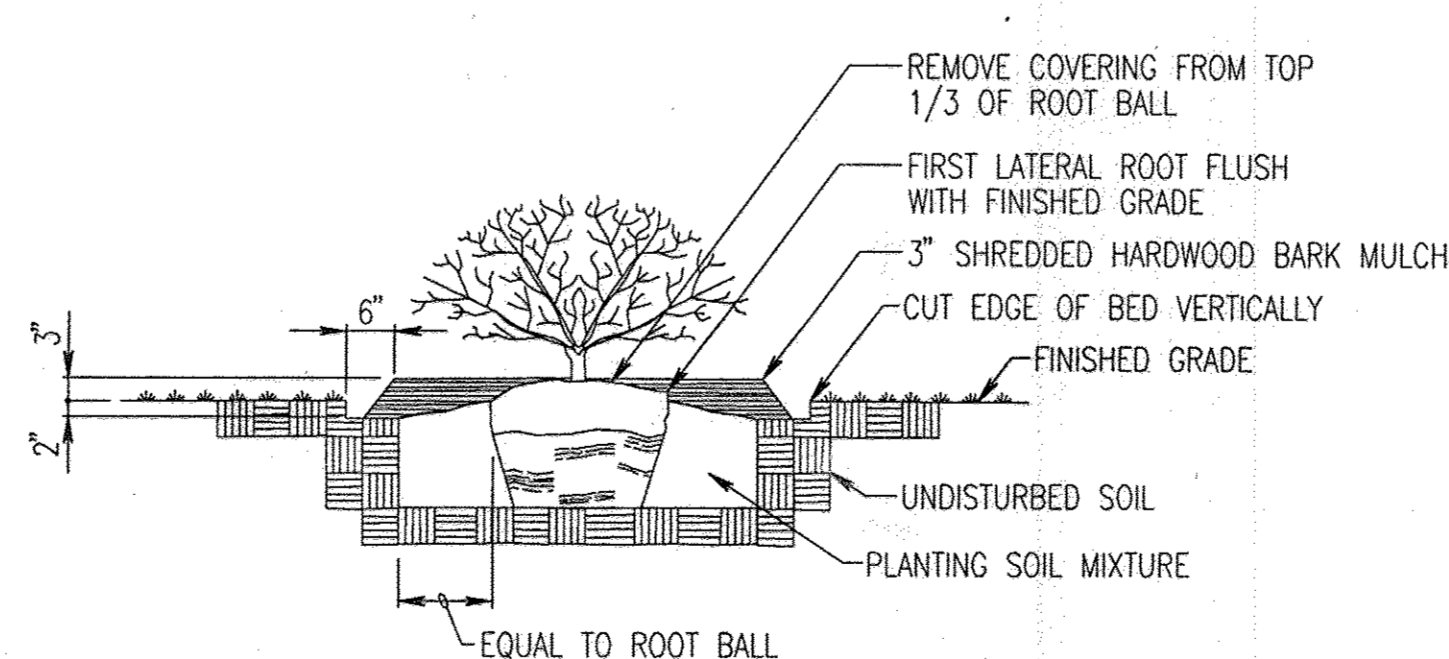


LANDSCAPE NOTES

- THIS DRAWING IS FOR LANDSCAPE PURPOSES ONLY. AS-BUILT CONDITIONS MAY VARY. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND UTILITY LOCATIONS SHOWN WITHIN THE PROJECT LIMITS, AND SHALL INFORM THE ARCHITECT OF ANY DISCREPANCIES OR POTENTIAL PROBLEMS PRIOR TO COMMENCING WORK.
- ALL PLANTING AND MULCHING SHALL BE DONE IN ACCORDANCE WITH HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
- ALL OAK TREES SHALL HAVE A MULCH BED SIX FEET (6') IN DIAMETER. ALL REDBUD TREES SHALL HAVE A MULCH BED FOUR FEET (4') IN DIAMETER.
- ALL MULCH BEDS SHALL BE SPREAD WITH THREE INCH (3") DEEP SHREDDED HARDWOOD BARK MULCH.
- ALL TREES SHALL BE SET BACK A MINIMUM OF SEVEN FEET (7') OFF THE EDGE OF ROADWAY PAVEMENT AND FIVE FEET (5') OFF THE BACK OF SIDEWALKS UNLESS OTHERWISE SHOWN OR NOTED.
- DO NOT PLANT TREES WITHIN 5'-0" OF THE CENTERLINE OF ALL UNDERGROUND UTILITY LINES. DO NOT PLANT TREES WITHIN 10'-0" OF THE CENTERLINE OF ALL OVERHEAD UTILITY LINES. "MISS UTILITY" (1-800-257-7777) MUST BE CONTACTED A MINIMUM OF 72 HOURS PRIOR TO PROCEEDING WITH ANY EXCAVATION FOR PLANT MATERIAL INSTALLATION.
- ALL EVERGREEN AND DECIDUOUS TREES GREATER THAN OR EQUAL TO 6'-0" HEIGHT MUST BE STAKED.
- NO PLANT MATERIAL SHALL BE PLANTED DIRECTLY IN FRONT OF ROADWAY SIGN SIGHT LINES.
- ALL TREES SHALL BE PLANTED ONLY DURING THE SPRING PLANTING SEASON.
- LANDSCAPE CONTRACTOR SHALL VERIFY PLANT MATERIAL QUANTITIES SHOWN ON PLANS WITH TOTALS IN PLANT SCHEDULE. WHERE DISCREPANCIES OCCUR BETWEEN THE PLANS AND SCHEDULE, THE PLANS SHALL GOVERN.
- ALL PLANT MATERIALS SHALL BE GUARANTEED FOR ONE FULL YEAR TO BE IN A HEALTHY GROWING CONDITION. PLANT MATERIALS WHICH DO NOT FULFILL THIS GUARANTEE SHALL BE REPLACED AT NO COST TO THE OWNER. REPLACEMENT SHALL BE GUARANTEED THROUGHOUT THE ORIGINAL GUARANTEE PERIOD. PLANTS THAT DIE WITHIN 30-60 DAYS SHALL BE REPLACED IMMEDIATELY.
- THE ONE YEAR GUARANTEE PERIOD SHALL BEGIN UPON THE OWNER'S APPROVAL OF THE PLANTING INSTALLATION. THE LANDSCAPE CONTRACTOR SHALL ALSO PROVIDE LANDSCAPE MAINTENANCE DURING THIS PERIOD.
- THE LANDSCAPE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL WATERING DURING CONSTRUCTION AND DURING THE ONE YEAR MAINTENANCE PERIOD.
- ALL PLANTING OPERATIONS SHALL BE UNDER THE SUPERVISION OF A PERSON WITH KNOWLEDGE AND EXPERIENCE IN PLANT INSTALLATION TECHNIQUES.
- ALL PLANTS SHALL BE EQUAL TO OR BETTER THAN THE REQUIREMENTS OF THE 'AMERICAN STANDARD FOR NURSERY STOCK', LATEST EDITION, AS PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN (HEREAFTER REFERRED TO AS AAN STANDARDS). ALL PLANTS SHALL BE TYPICAL OF THEIR SPECIES AND VARIETY. SHALL HAVE A NORMAL HABIT OF GROWTH, AND SHALL BE FIRST QUALITY, SOUND, VIGOROUS, WELL BRANCHED AND WITH HEALTHY, WELL-FURNISHED ROOT SYSTEMS. THEY SHALL BE FREE OF DISEASE, INSECT PESTS AND MECHANICAL INJURIES.
- ALL PLANTS SHALL HAVE BEEN NURSERY GROWN AND SHALL HAVE BEEN GROWN UNDER THE SAME CLIMATIC CONDITIONS AS THE LOCATION OF THIS PROJECT FOR AT LEAST TWO YEARS BEFORE PLANTING. NEITHER HEELED IN PLANTS NOR PLANTS FROM COLD STORAGE WILL BE ACCEPTED.
- ALL SUBSTITUTIONS OF PLANT MATERIAL SHALL BE REQUESTED IN WRITING TO THE LANDSCAPE ARCHITECT AND APPROVED IN WRITING BY THE OWNER. FAILURE TO OBTAIN SUBSTITUTIONS IN WRITING MAY RESULT IN LIABILITY TO THE CONTRACTOR.
- ALL PLANT MATERIALS, TOPSOIL, MULCH FERTILIZERS, SOIL AMENITIES, PLANTING SUPPLIES AND METHODS SHALL BE SUBJECT TO LANDSCAPE ARCHITECT'S APPROVAL. REJECTED MATERIAL SHALL BE REMOVED FROM THE SITE WITHOUT DELAY.
- ALL TREE GUYING AND/OR STAKING MATERIALS SHALL BE REMOVED PRIOR TO THE EXPIRATION OF THE ONE YEAR MAINTENANCE PERIOD.



GENERAL NOTE:
GRADES BASED ON INTERPOLATED ELEVATIONS DERIVED FROM EXISTING PLANS. THE CONTRACTOR IS TO VERIFY ELEVATIONS AND ADJUST GRADES AS NECESSARY. MAXIMUM SLOPES ON RAMPS, LANDINGS WILL BE 2% IN EITHER DIRECTION, 8% ON RAMPS AND 1% ON SMOKING SHELTER SLABS.



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 4/20/05
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE

[Signature] 4/22/05
CHIEF, DIVISION OF LAND DEVELOPMENT HP DATE

[Signature] 4/22/05
DIRECTOR DATE

PLANTING DETAIL - DECIDUOUS TREE

PLANTING DETAIL - SHRUB

PLANTING DETAIL - CONTAINER PLANT

ADD RETAINING WALL SHEETS	10/25/05
G BID SET	3/24/05

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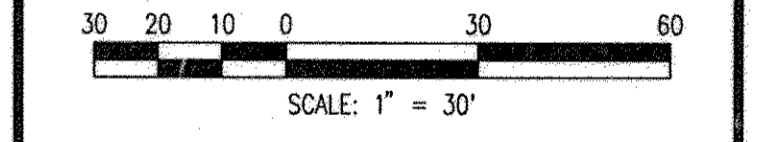


SYSTEMS INTEGRATION BUILDINGS AND VAN PAD

SDP SET

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GRAPHIC SCALES



WRA
WHITMAN, REQUARDT AND ASSOCIATES, LLP
801 S. CAROLINE STREET
BALTIMORE, MARYLAND 21231
410 - 235 - 3450

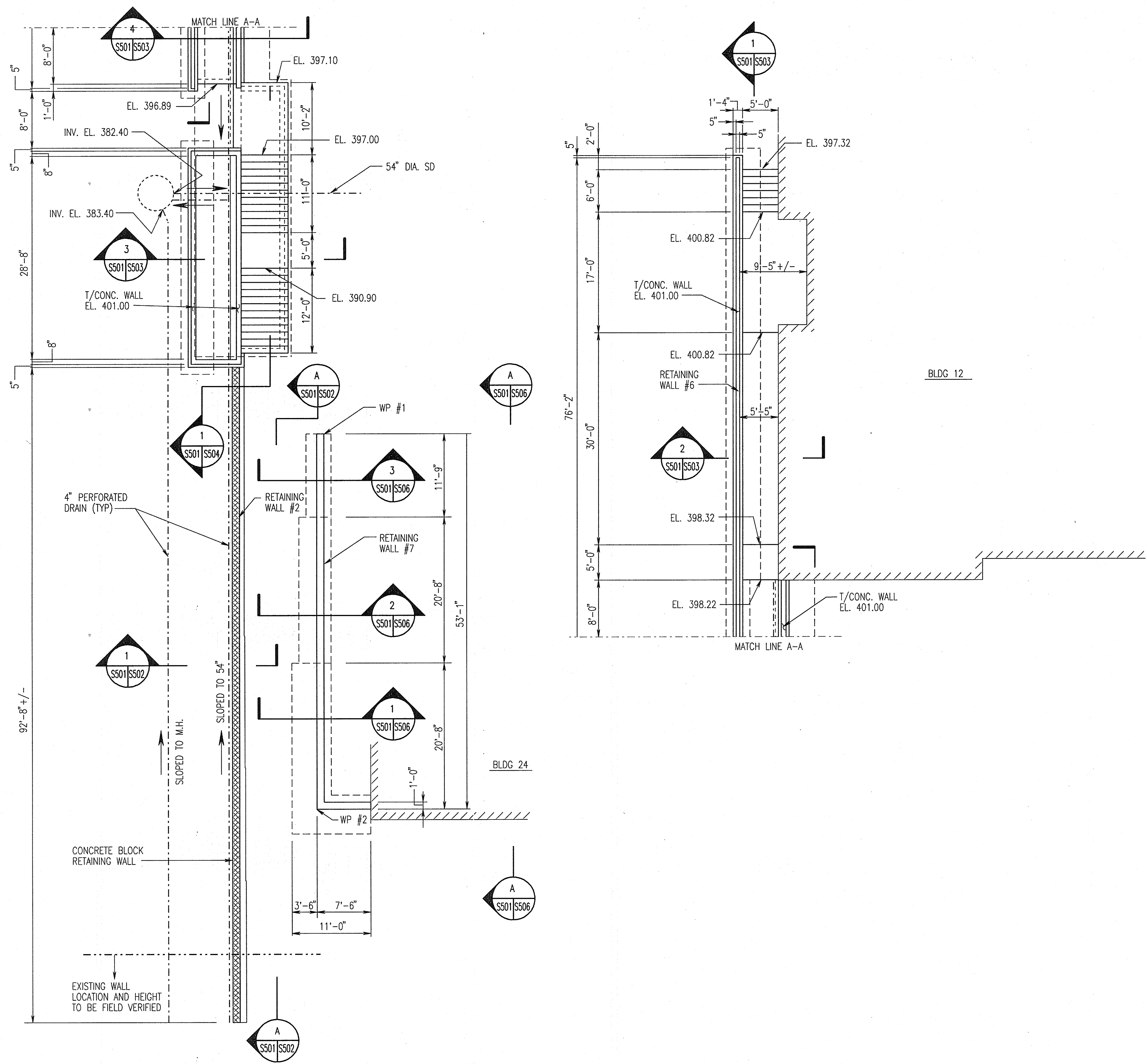
LANDSCAPE NOTES AND DETAILS

DRAWING NO. **L501**

Sheet 64 of 77

Scale: 1"=30'

Designed By: H.W.P. Drawn By: S.A.Z.
Checked By: A.U.O. Date: 03/25/05



RETAINING WALL PLAN

SCALE: 1/8" = 1'-0"

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Howard County
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE: 3/7/06

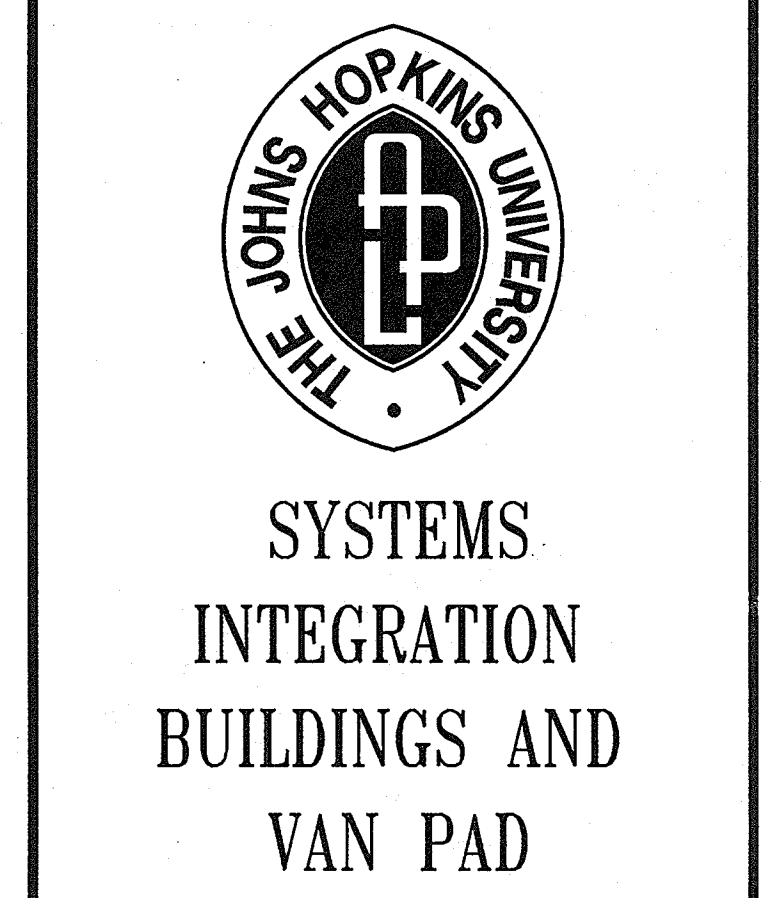
Cindy Hamrick
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE: 3/7/06

Maria M. Leyle
 DIRECTOR DATE: 3/8/06

REVISIONS	

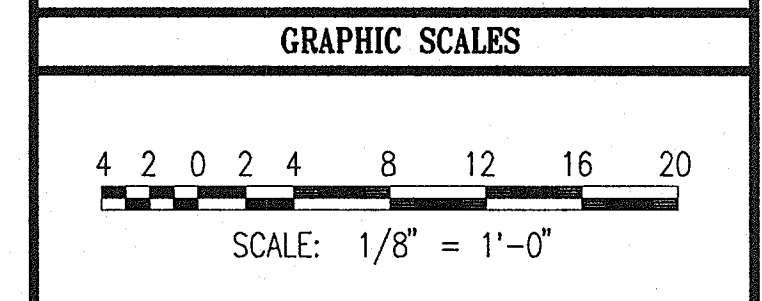
RETAINING WALL DETAILS 10/25/05

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RETAINING WALLS #2, #6 & #7 PLAN

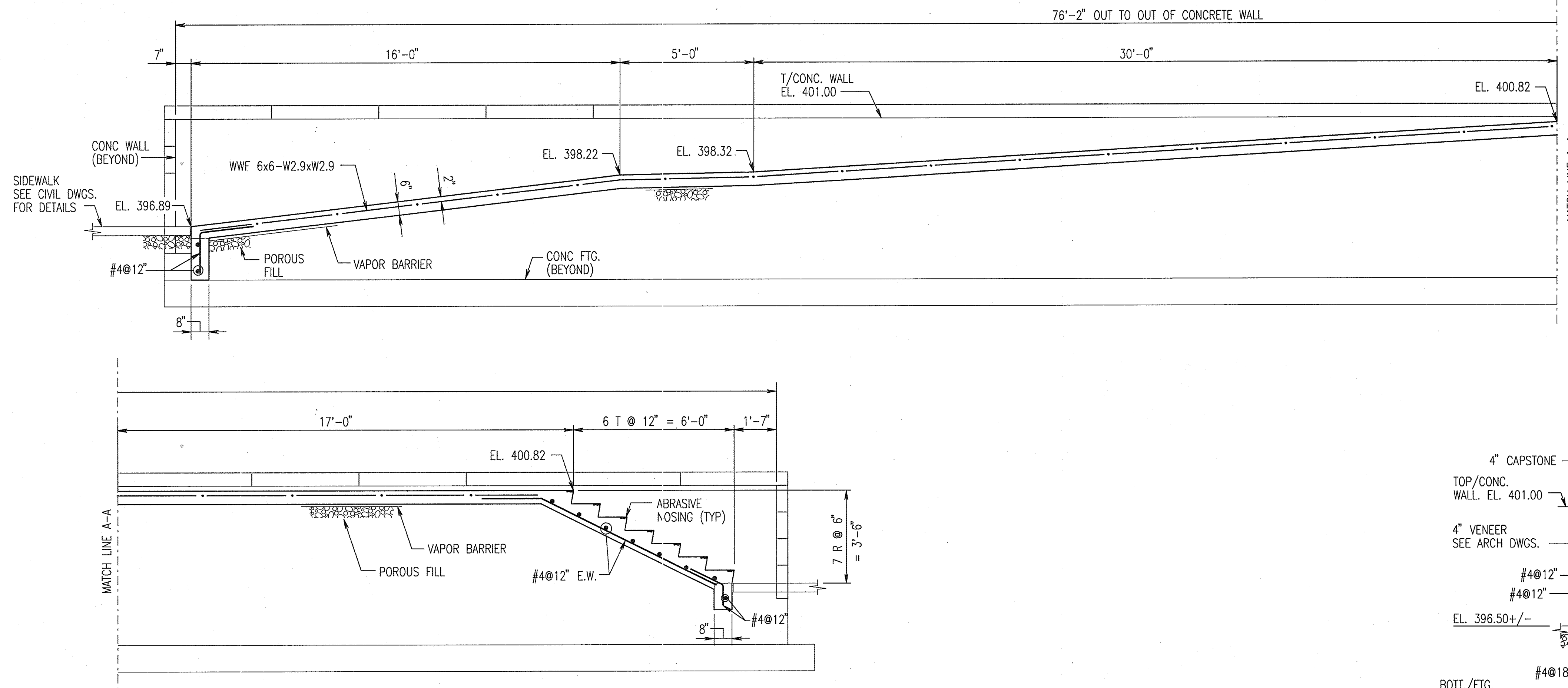
DRAWING NO. **S501**

Sheet 65 of 77

Scale: AS NOTED

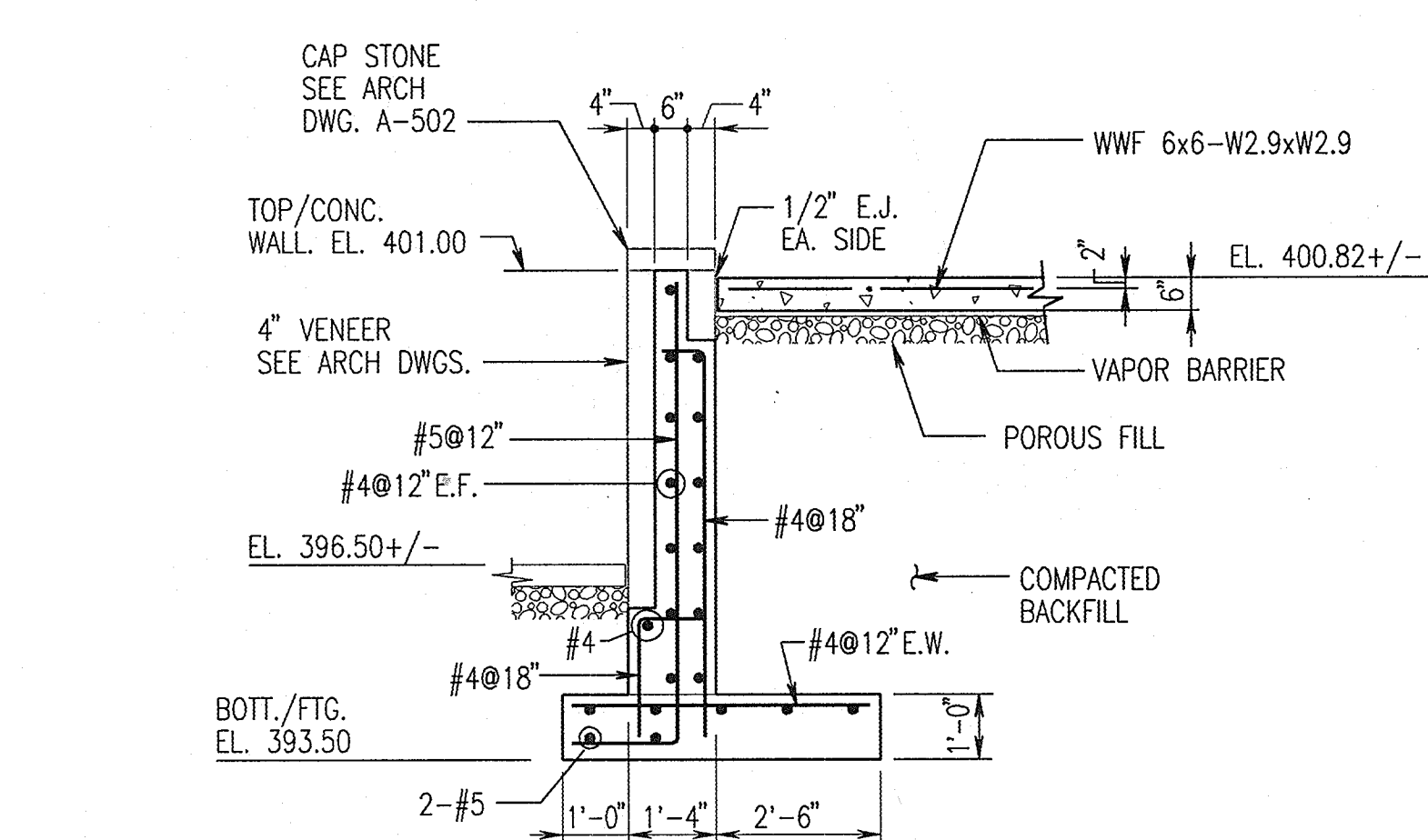
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Checked By: A.U.O. Date: 10/25/05



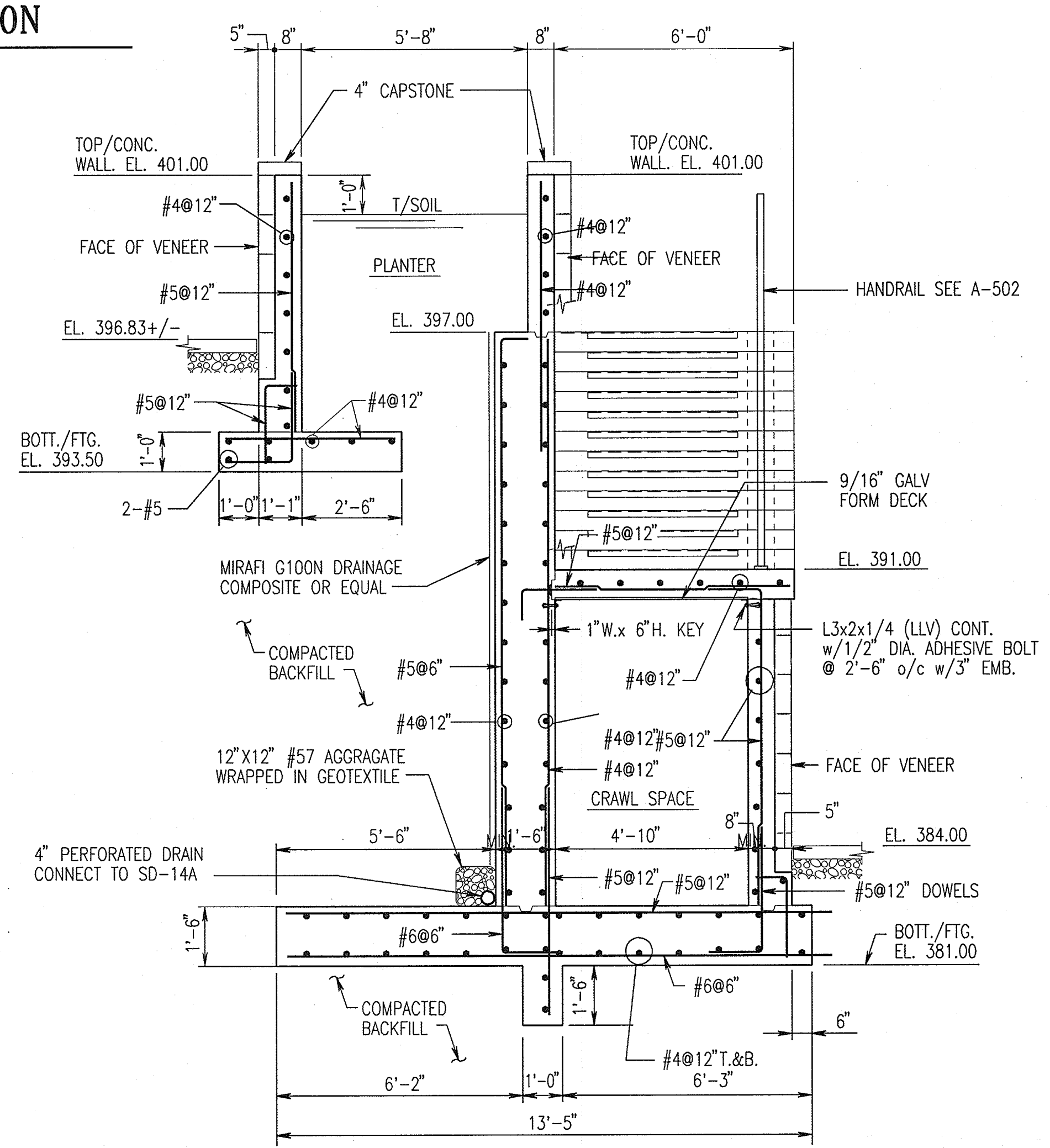
RAMP LONGITUDINAL SECTION

SCALE : 3/8" = 1'-0"



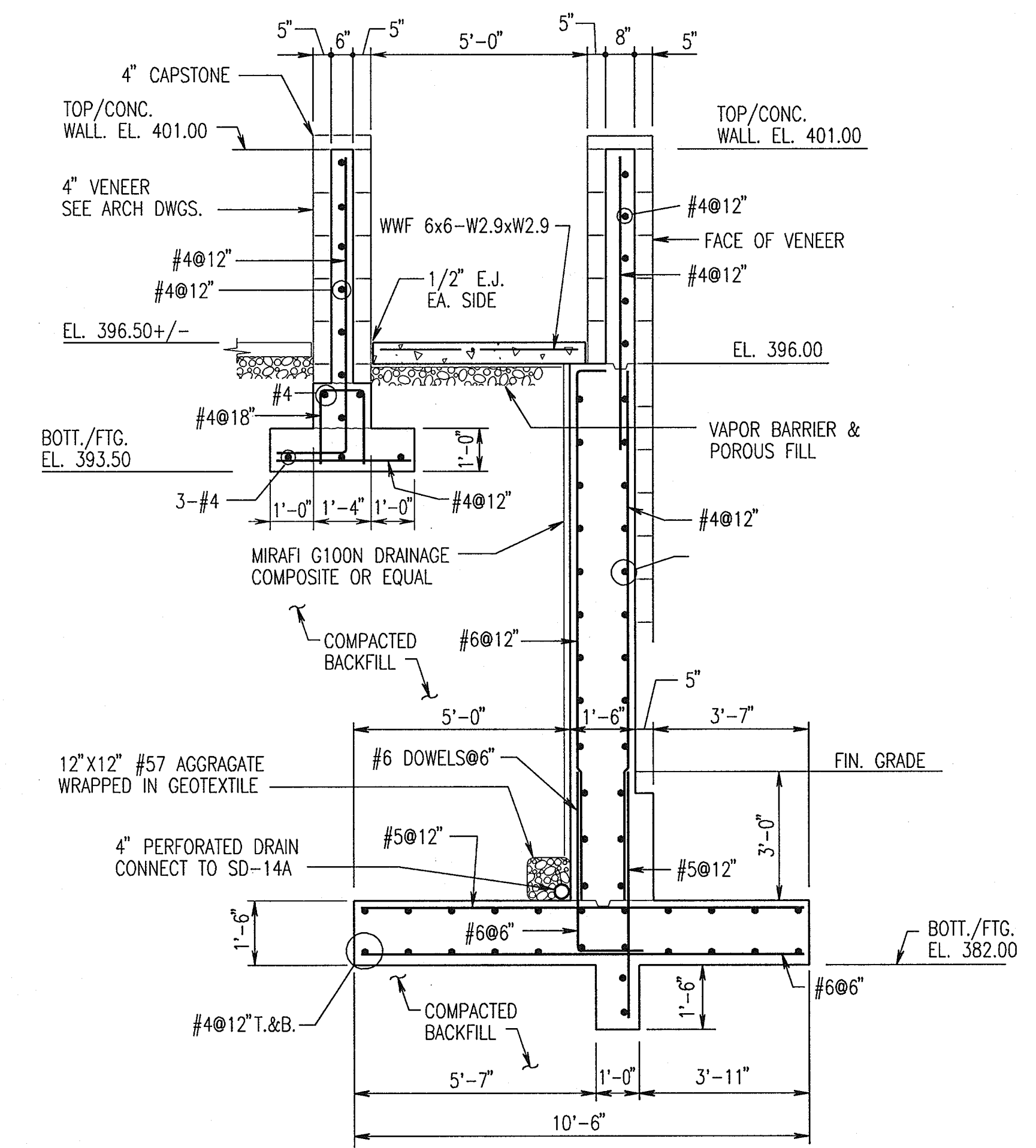
RAMP CROSS SECTION

SCALE : 3/8" = 1'-0"



STAIR CROSS SECTION

SCALE : 3/8" = 1'-0"



STAIR CROSS SECTION

SCALE : 3/8" = 1'-0"

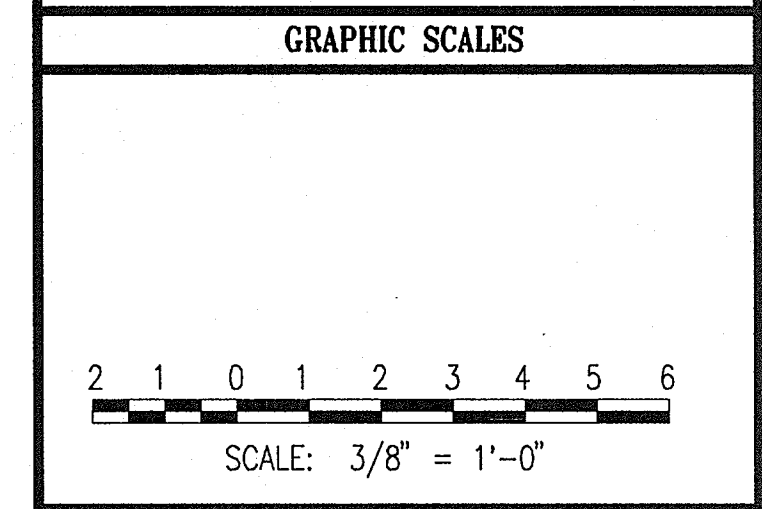
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SYSTEMS INTEGRATION BUILDINGS AND VAN PAD

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 410 - 235 - 3450

RETAINING WALL #6 SECTIONS

DRAWING NO. **S503**

Sheet 67 of 77

Scale: AS NOTED

Designed By: WC Drawn By: SRI

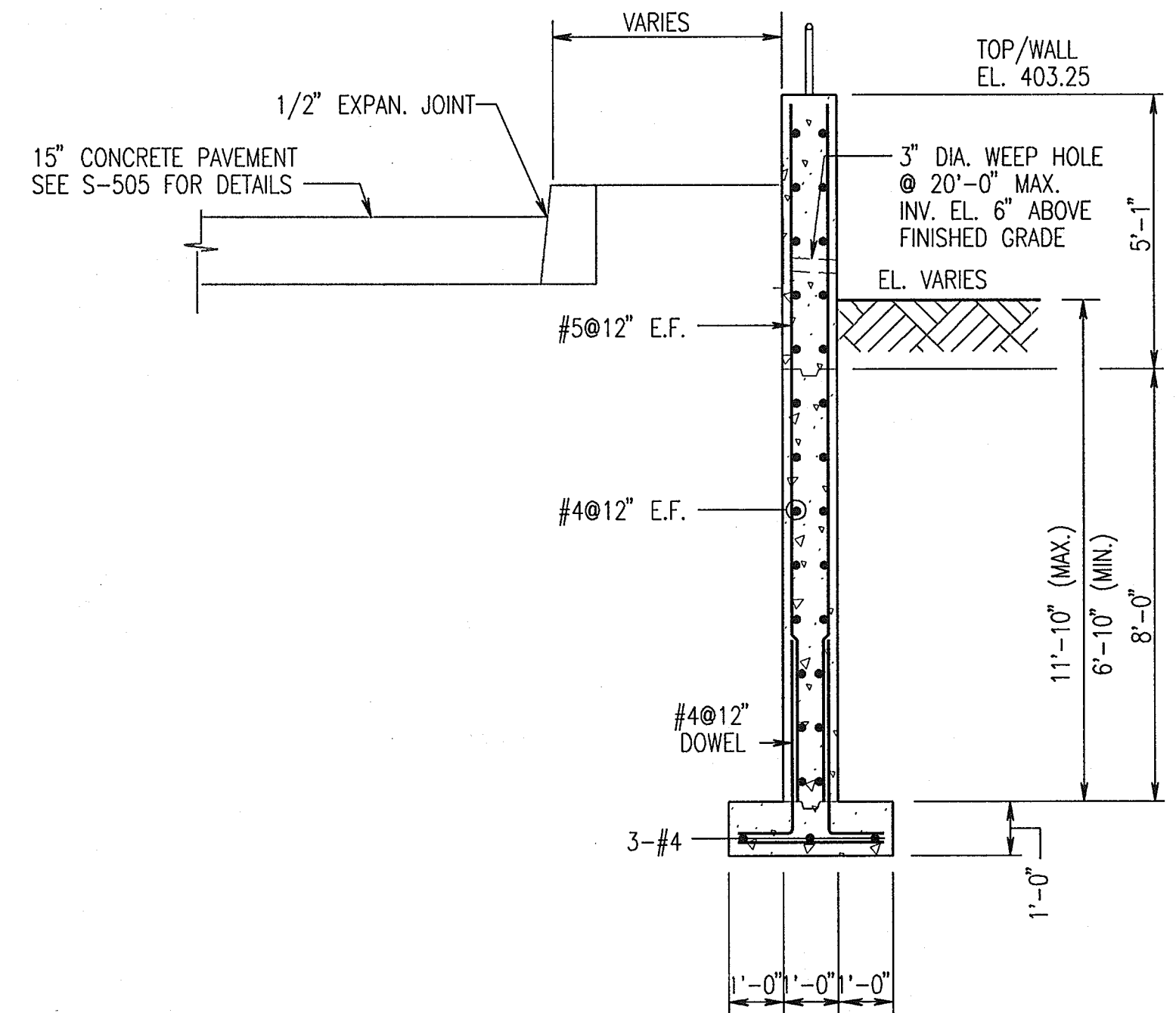
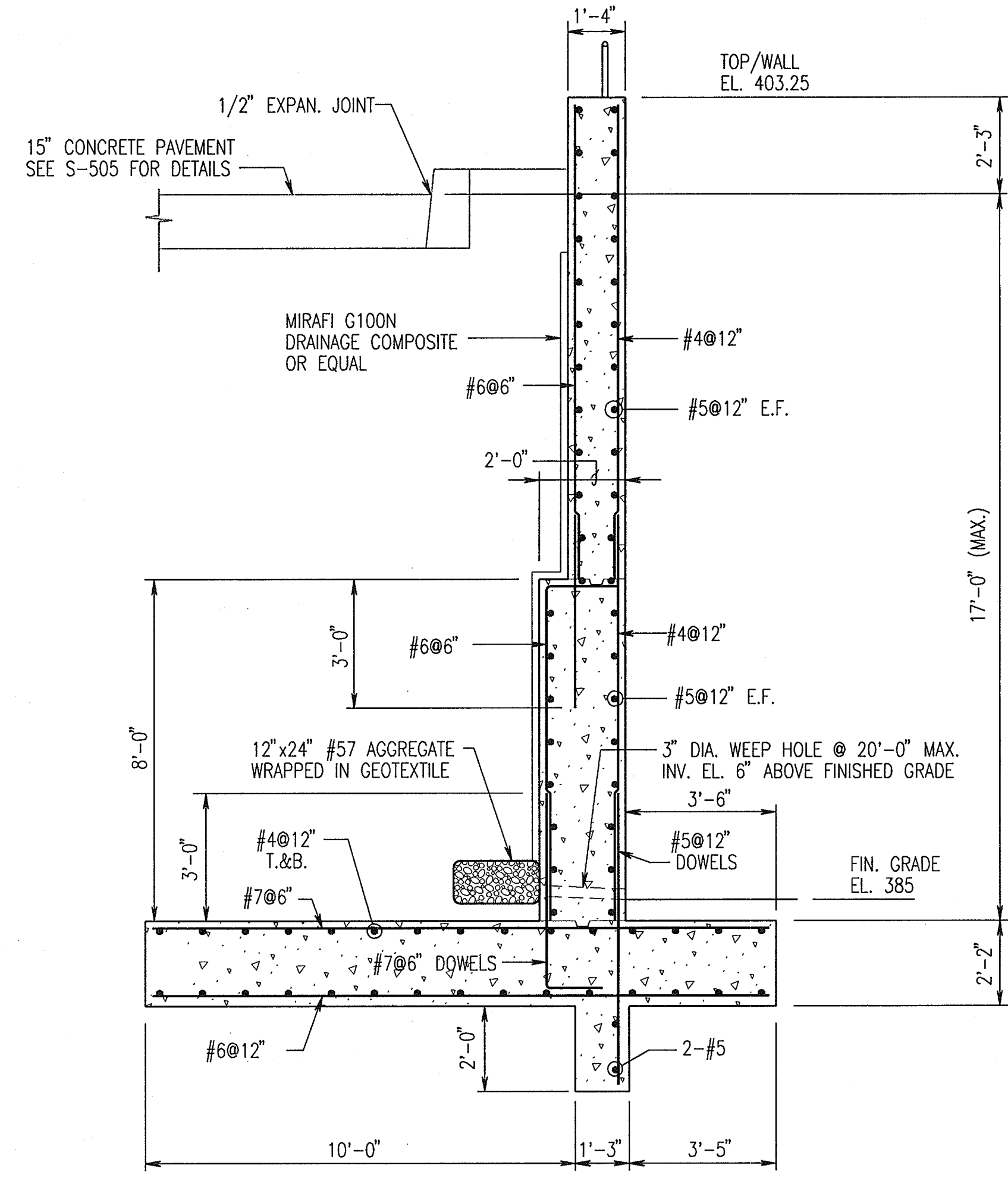
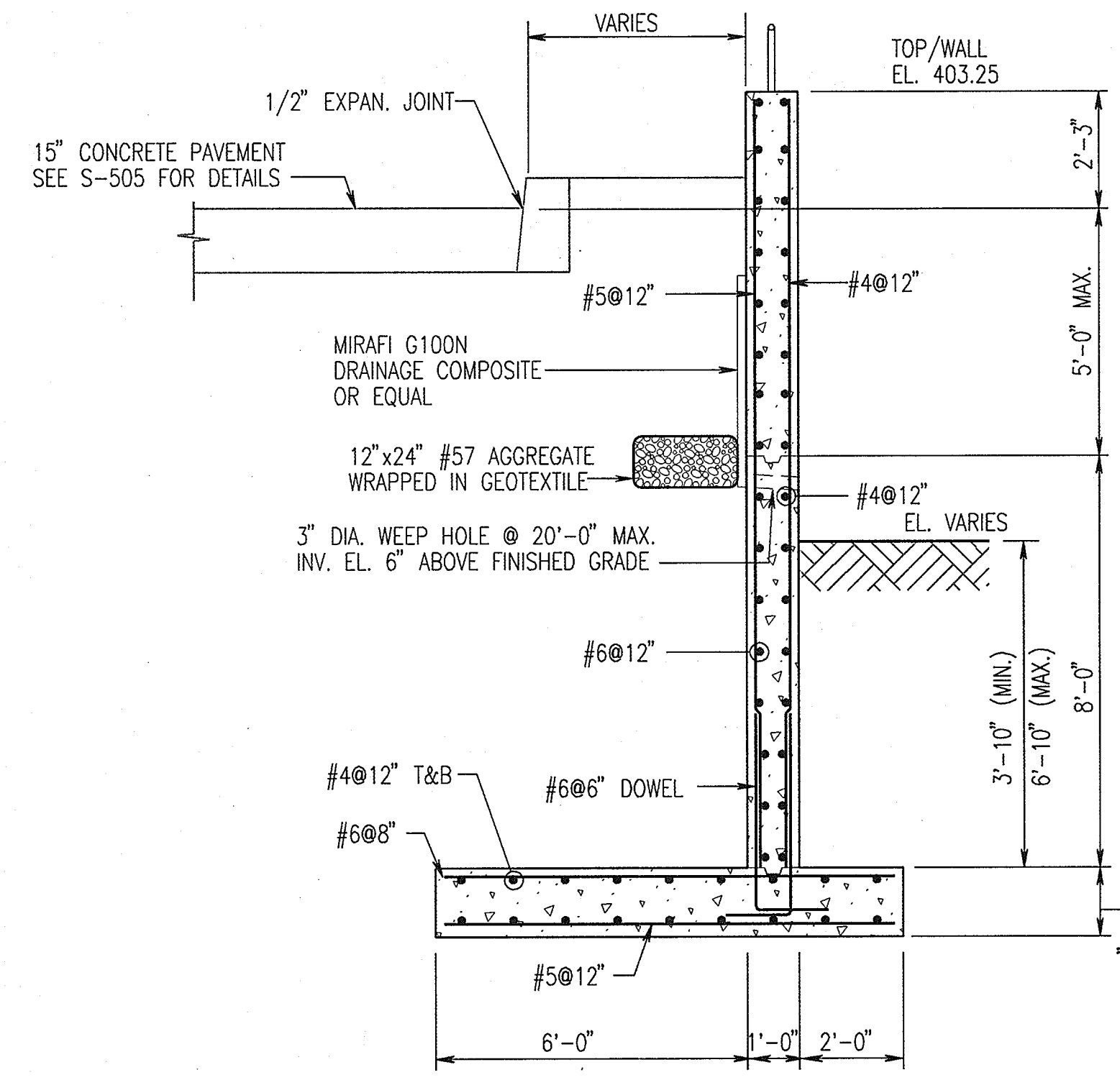
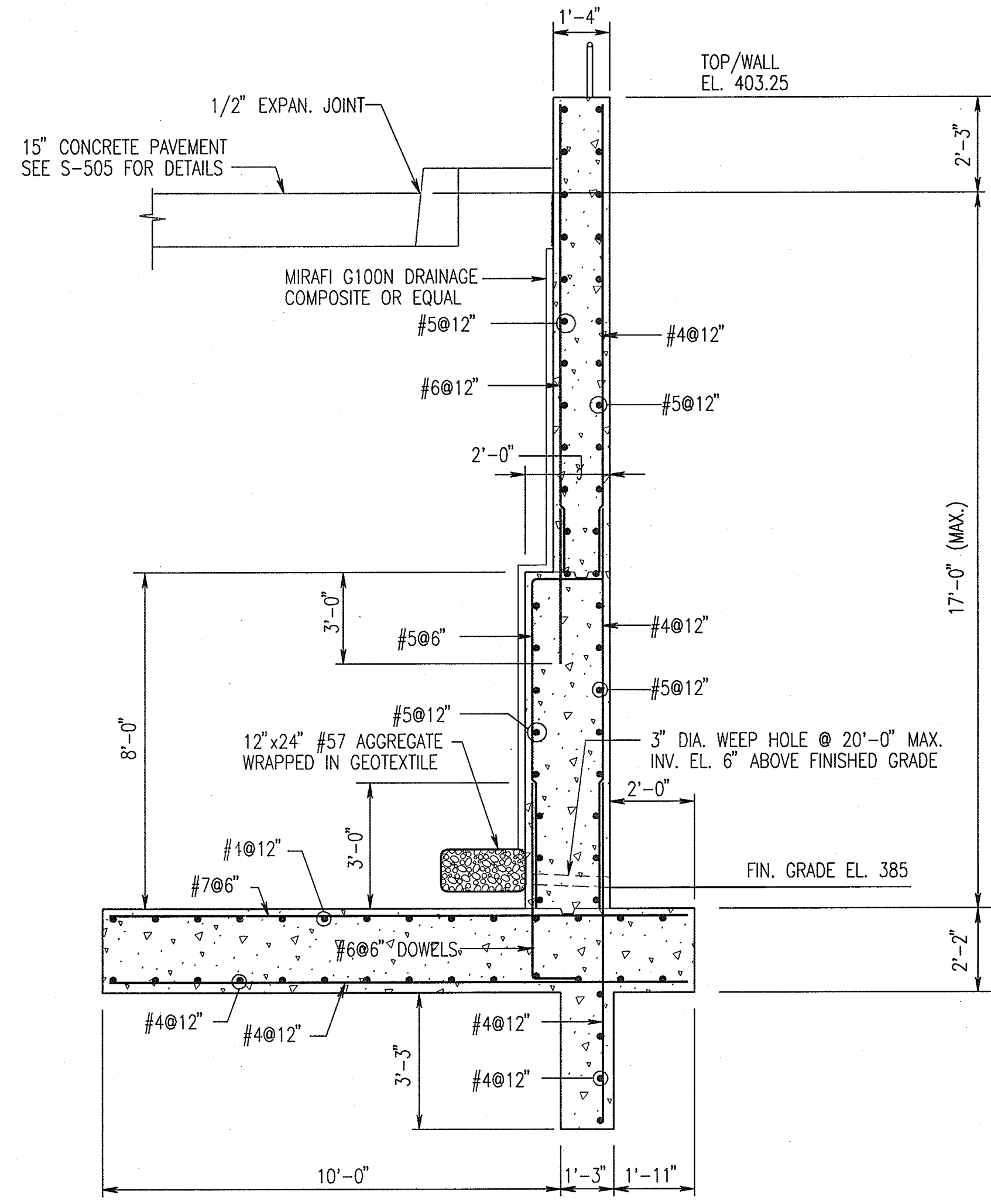
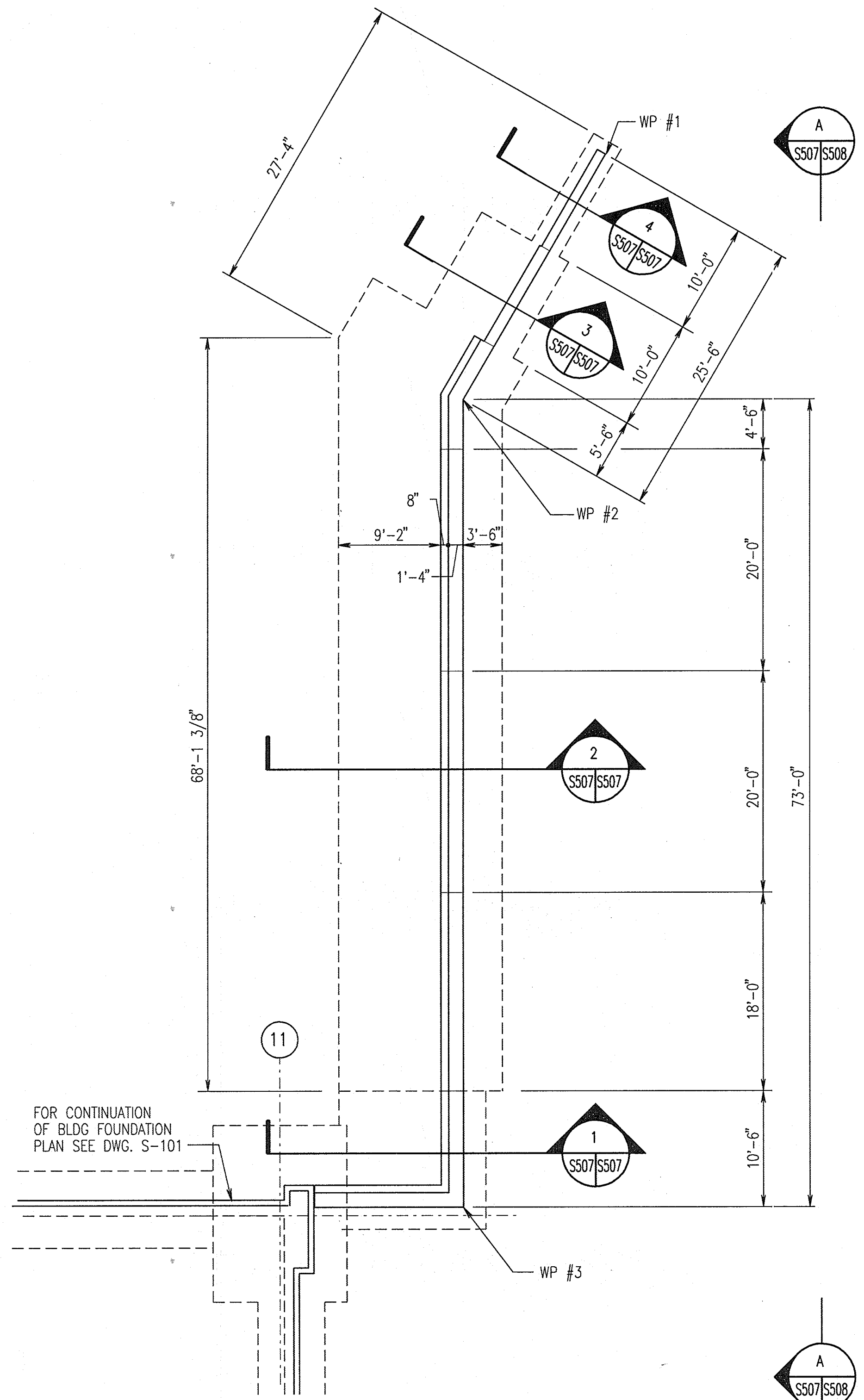
Checked By: A.U.O. Date: 10/25/05

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Howard County 3/7/06
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Condy Hamilton 3/7/06
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Mark DeWeger 3/7/06
 DIRECTOR DATE



NOTE: BACKFILL WALLS FRONT AND BACK SIMULTANEOUSLY UP TO EL. 391.0

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 [Signature] 5/7/06
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE
 [Signature] 3/1/06
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE
 [Signature] 3/16/06
 DIRECTOR DATE

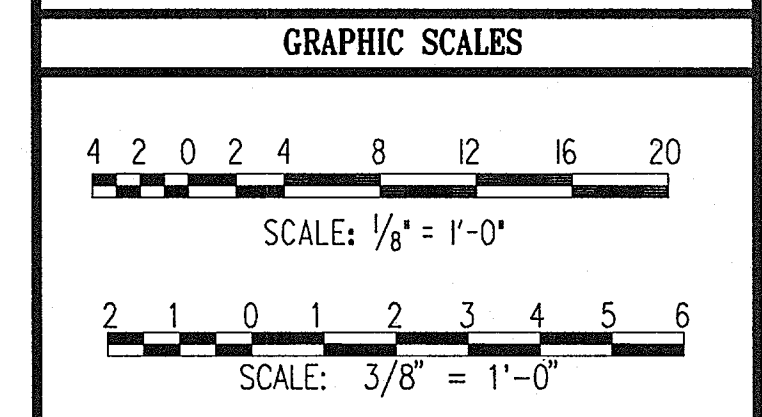
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RETAINING WALL DETAILS 10/25/05

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 SYSTEMS INTEGRATION BUILDINGS AND VAN PAD

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 801 S. CAROLINE STREET
 BALTIMORE, MARYLAND 21231
 410 - 235 - 3450

RETAINING WALL #3
 PLAN AND SECTIONS

DRAWING NO. S507
 Sheet 71 of 77

Scale: AS NOTED
 Designed By: WC Drawn By: SRI
 Checked By: A.U.O. Date: 10/25/05

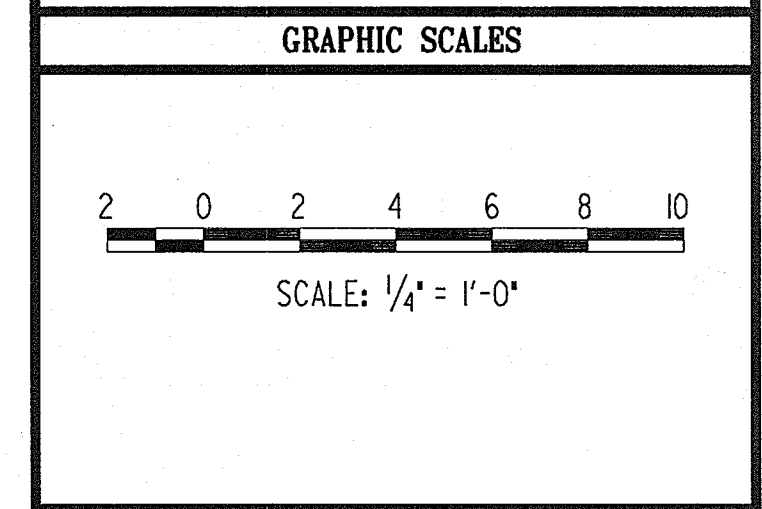
REVISIONS	

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RETAINING WALL #3 ELEVATION AND SECTIONS

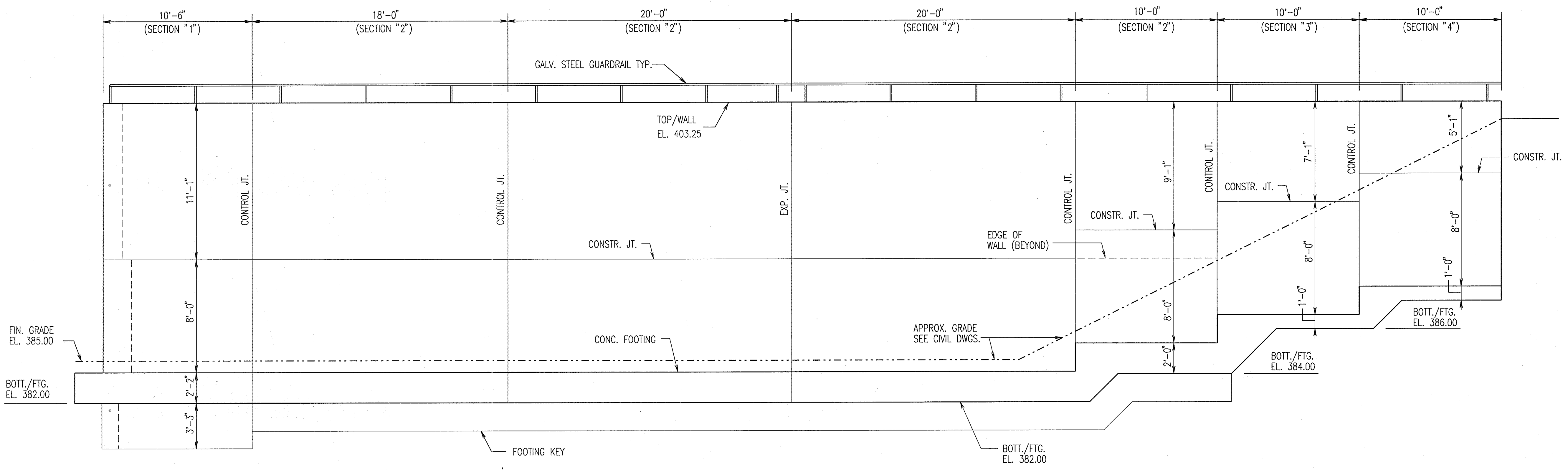
DRAWING NO. **S508**

Sheet 72 of 77

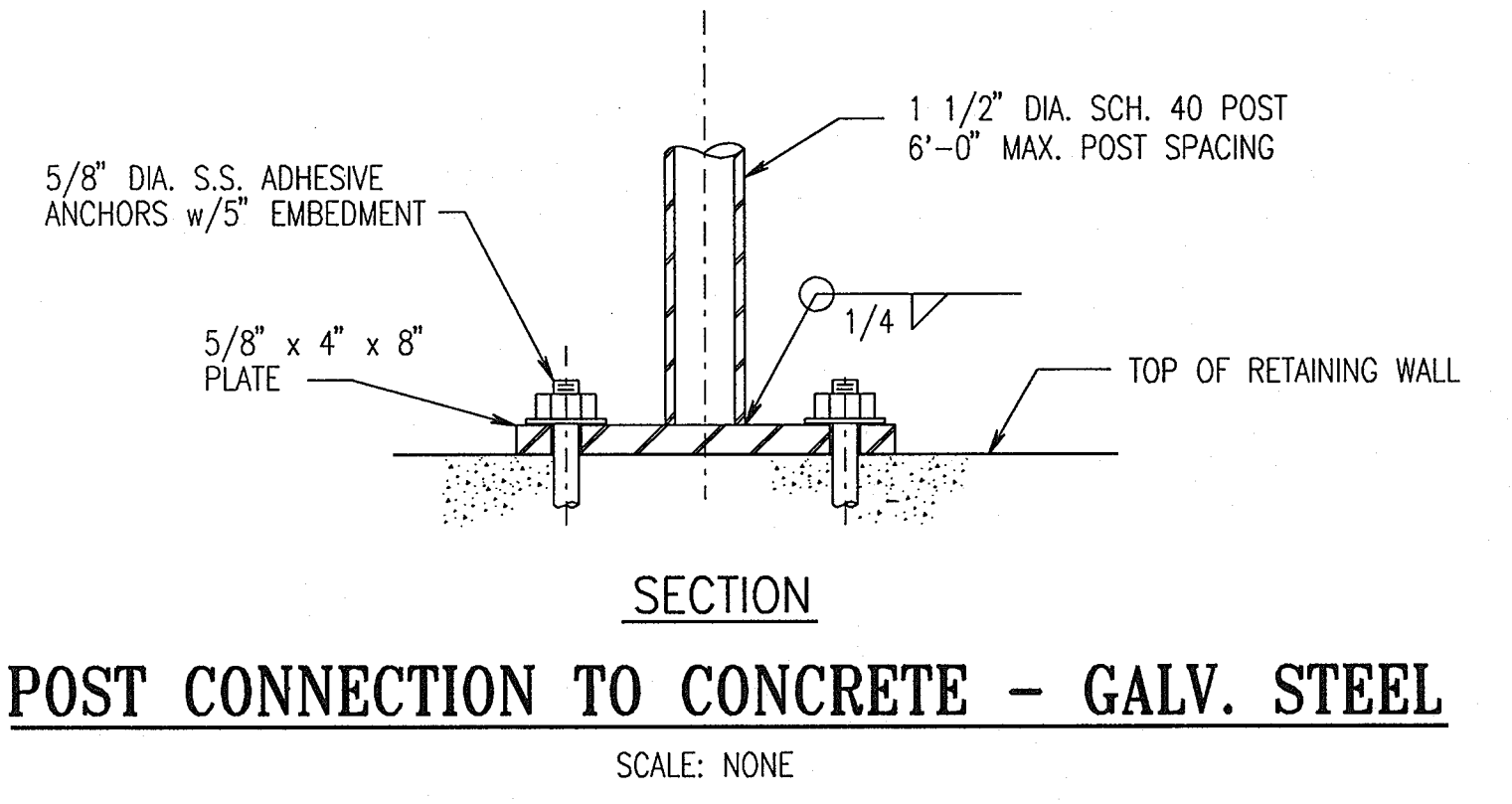
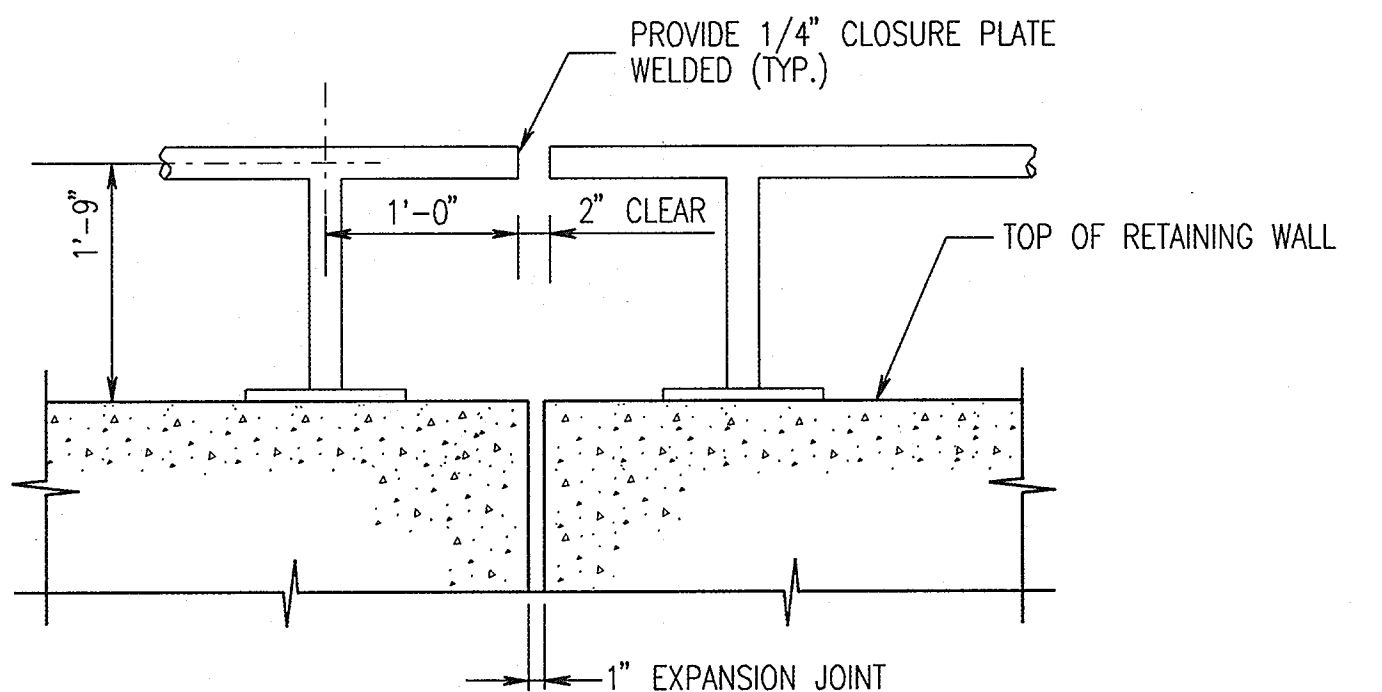
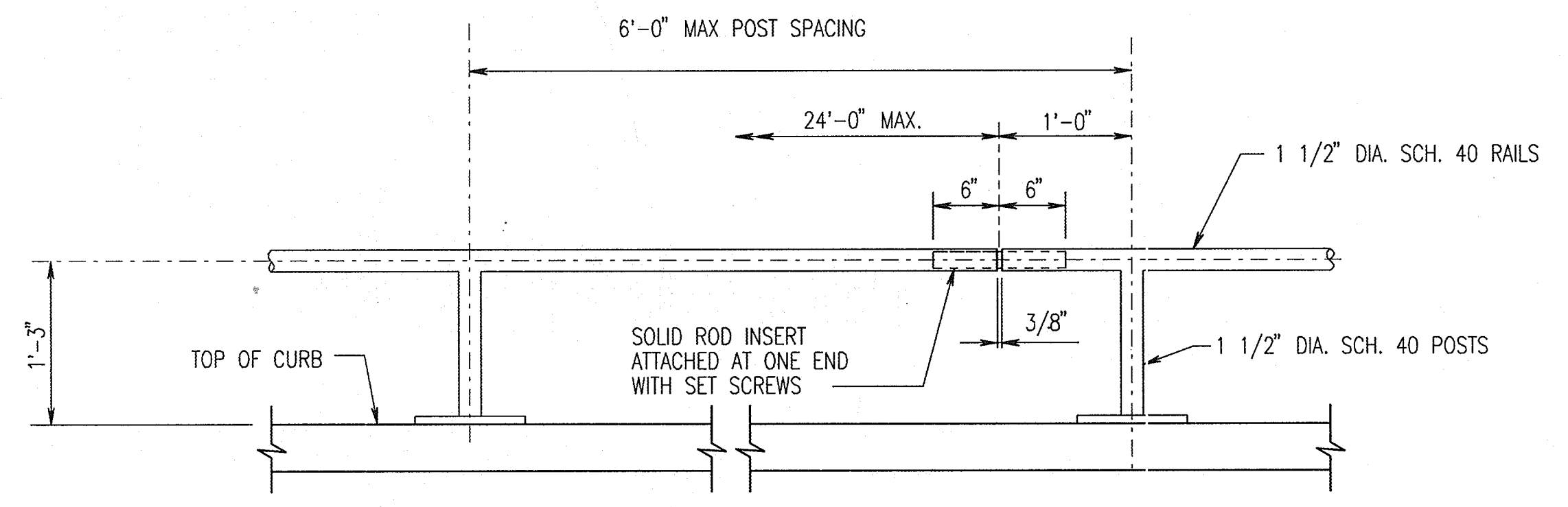
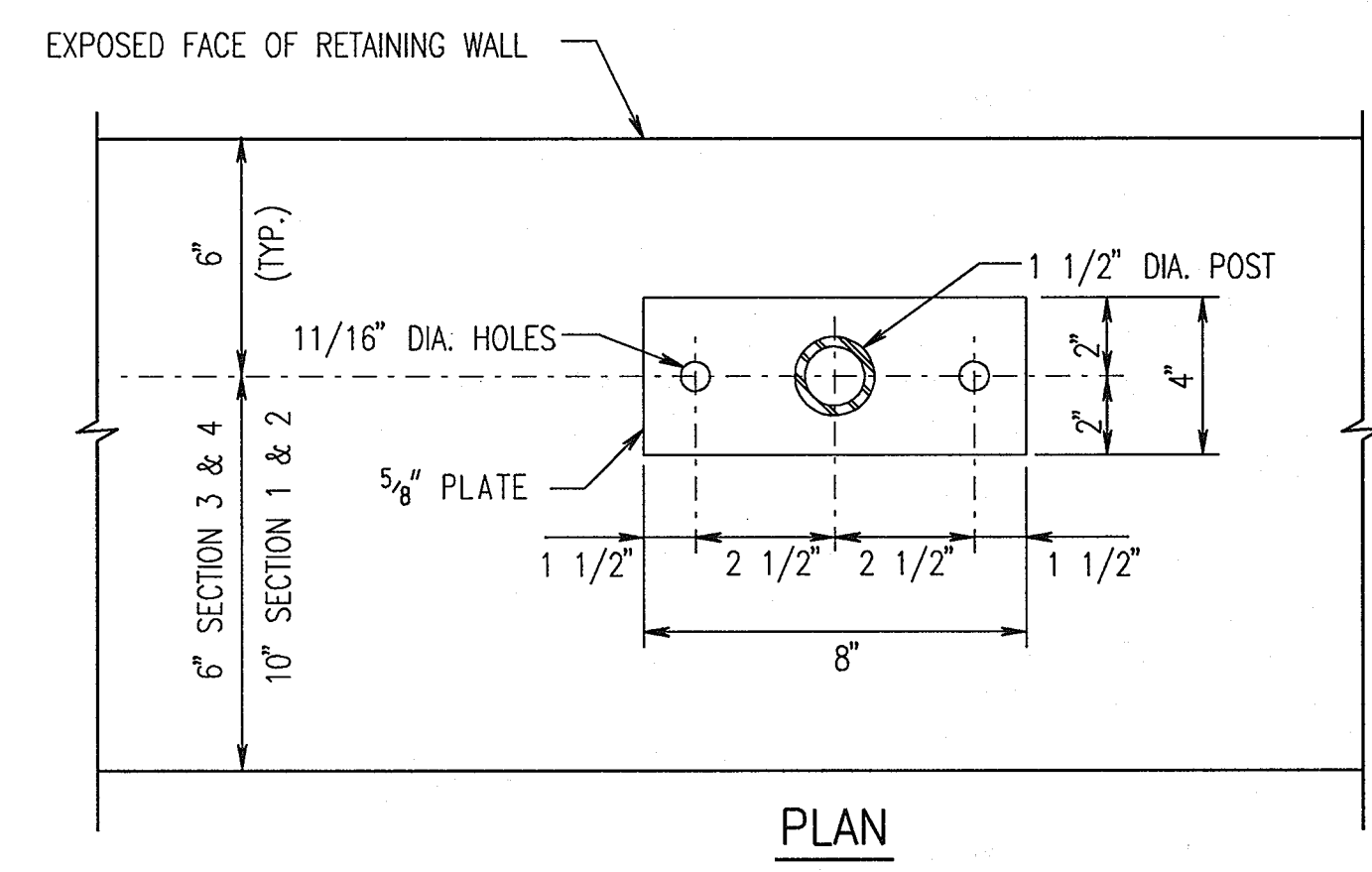
Scale: AS NOTED

Designed By: WC Drawn By: SRI

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RETAINING WALL ELEVATION
 SCALE: 1/4" = 1'-0"



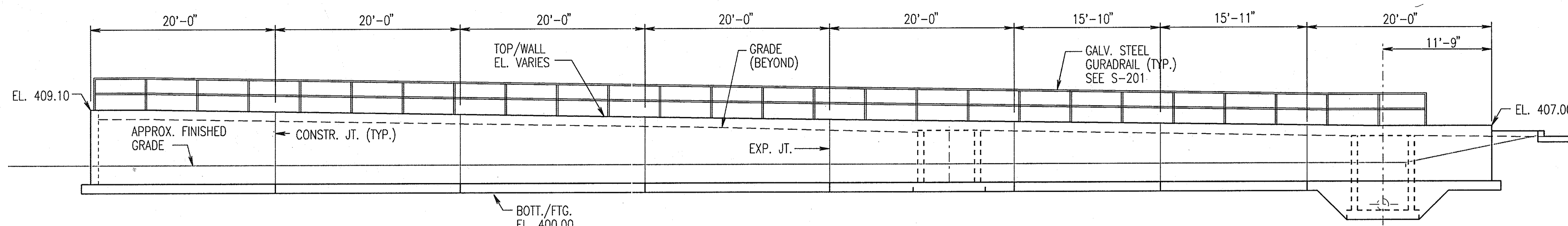
POST CONNECTION TO CONCRETE - GALV. STEEL
 SCALE: NONE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

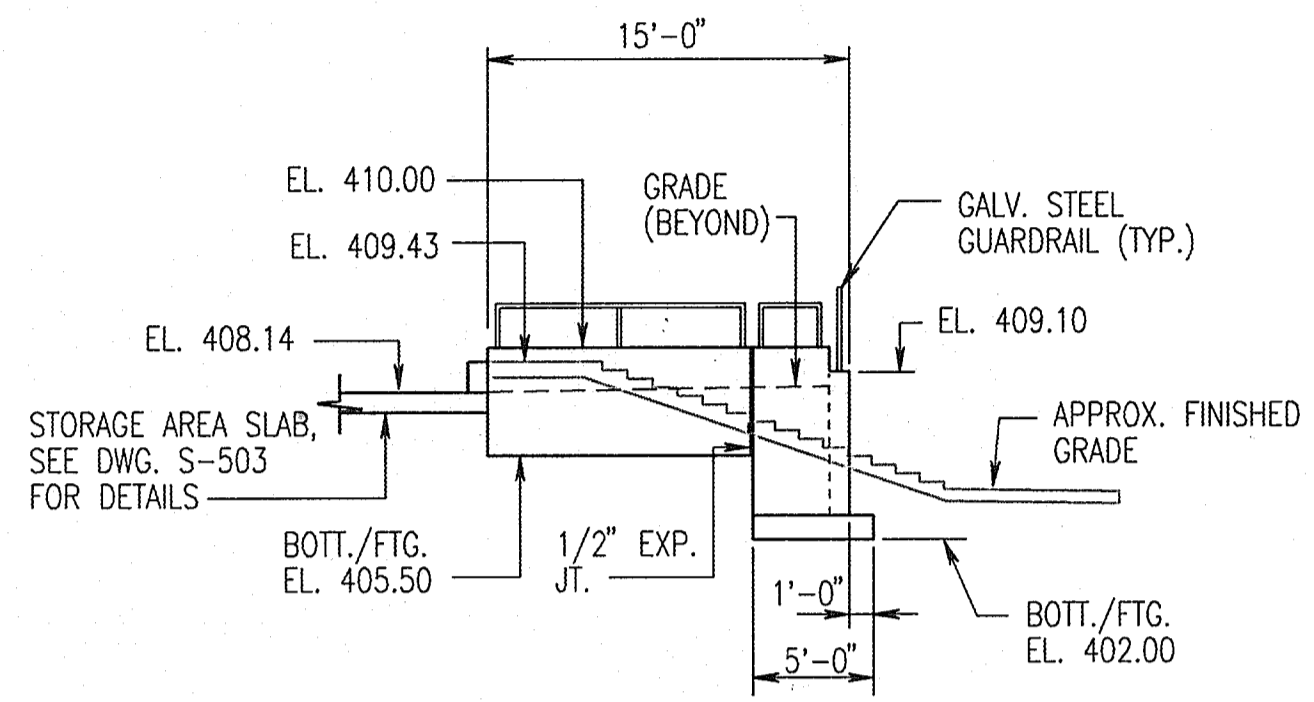
Howard County
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE 3/1/06

Cindy Hamstra
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE 3/7/06

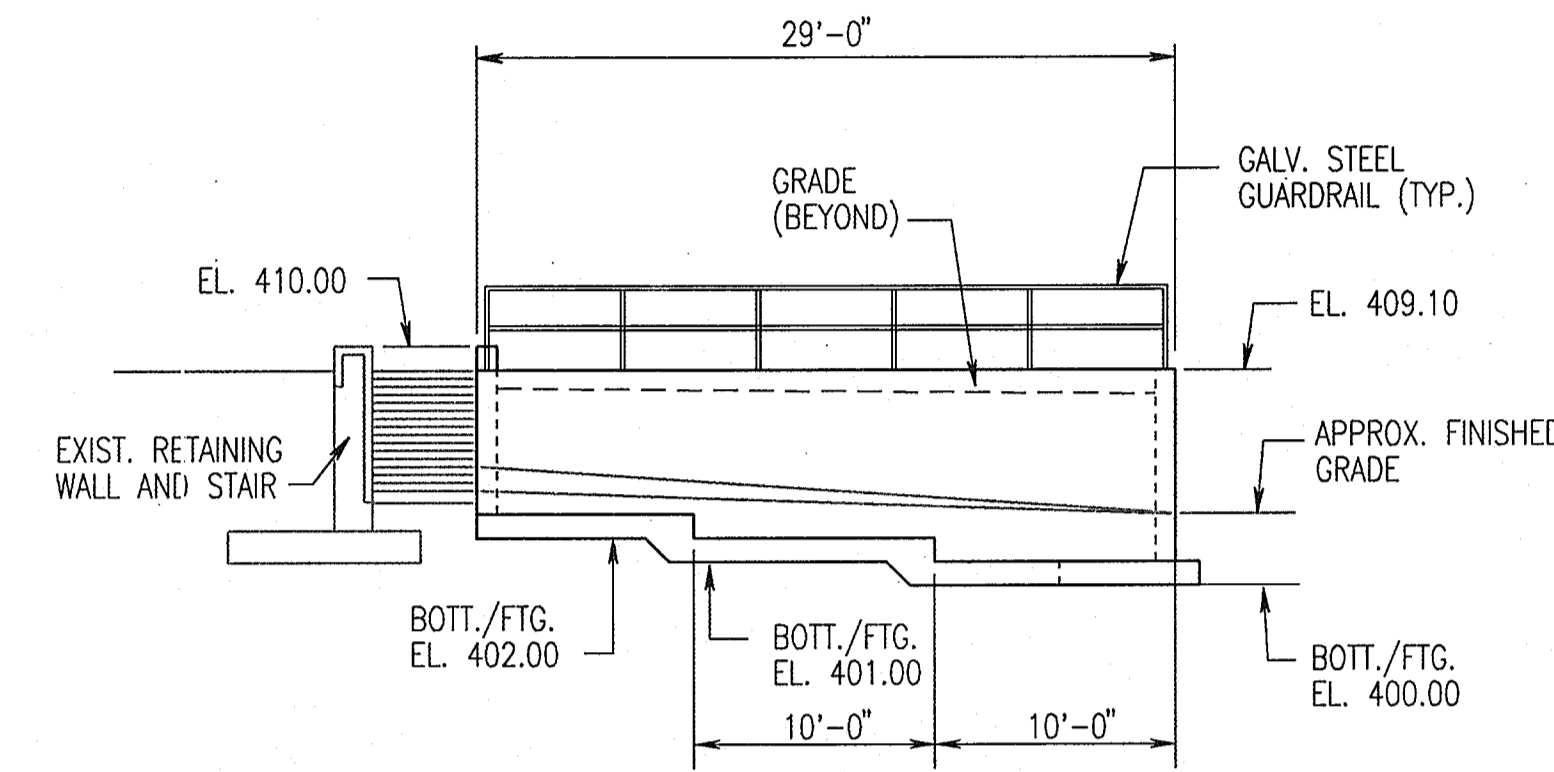
David K. Leyle
 DIRECTOR DATE 5/18/06



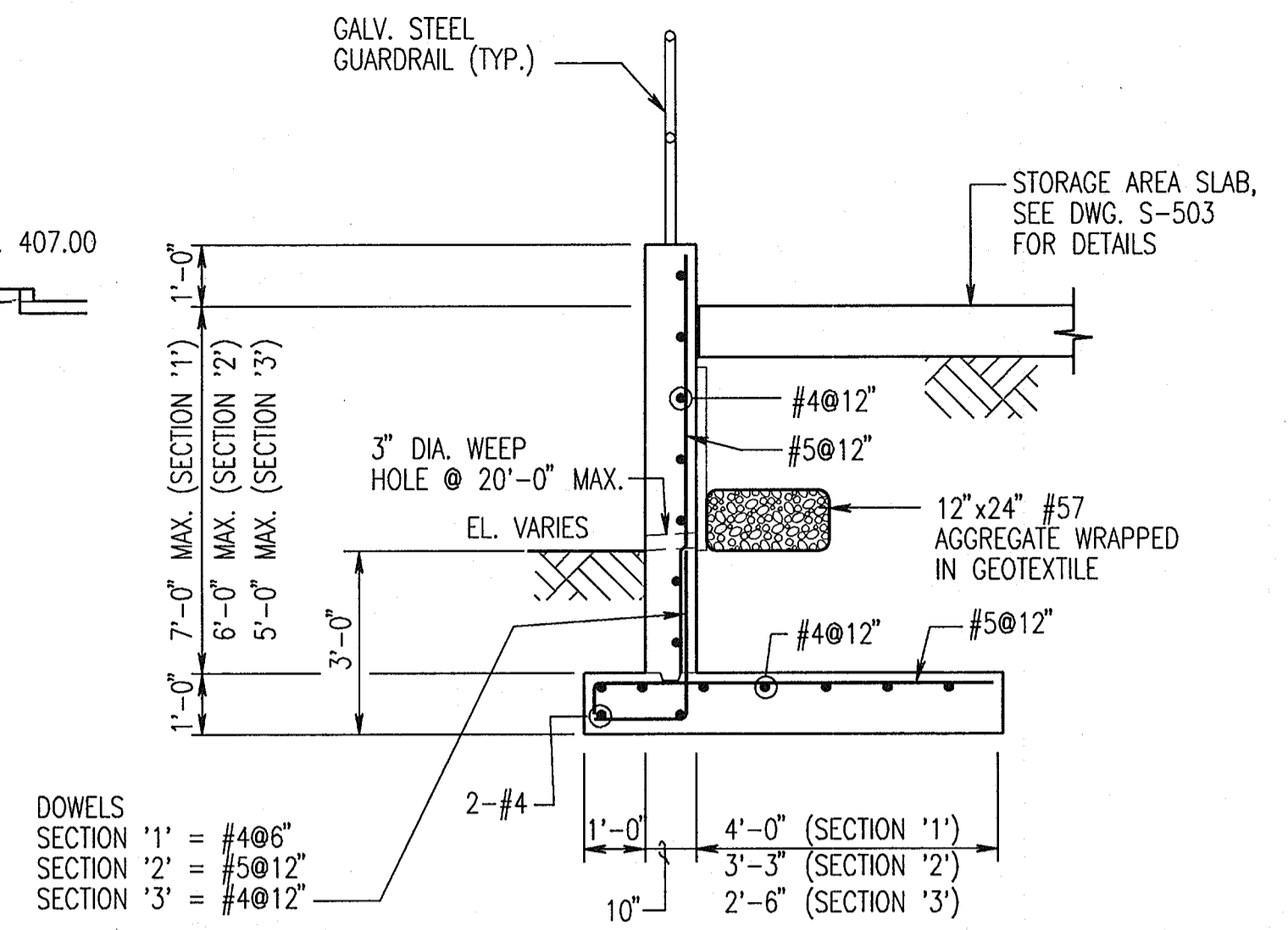
A
RETAINING WALL ELEVATION
SCALE: 1/8" = 1'-0"



B
RETAINING WALL ELEVATION
SCALE: 1/8" = 1'-0"



C
RETAINING WALL ELEVATION
SCALE: 1/8" = 1'-0"

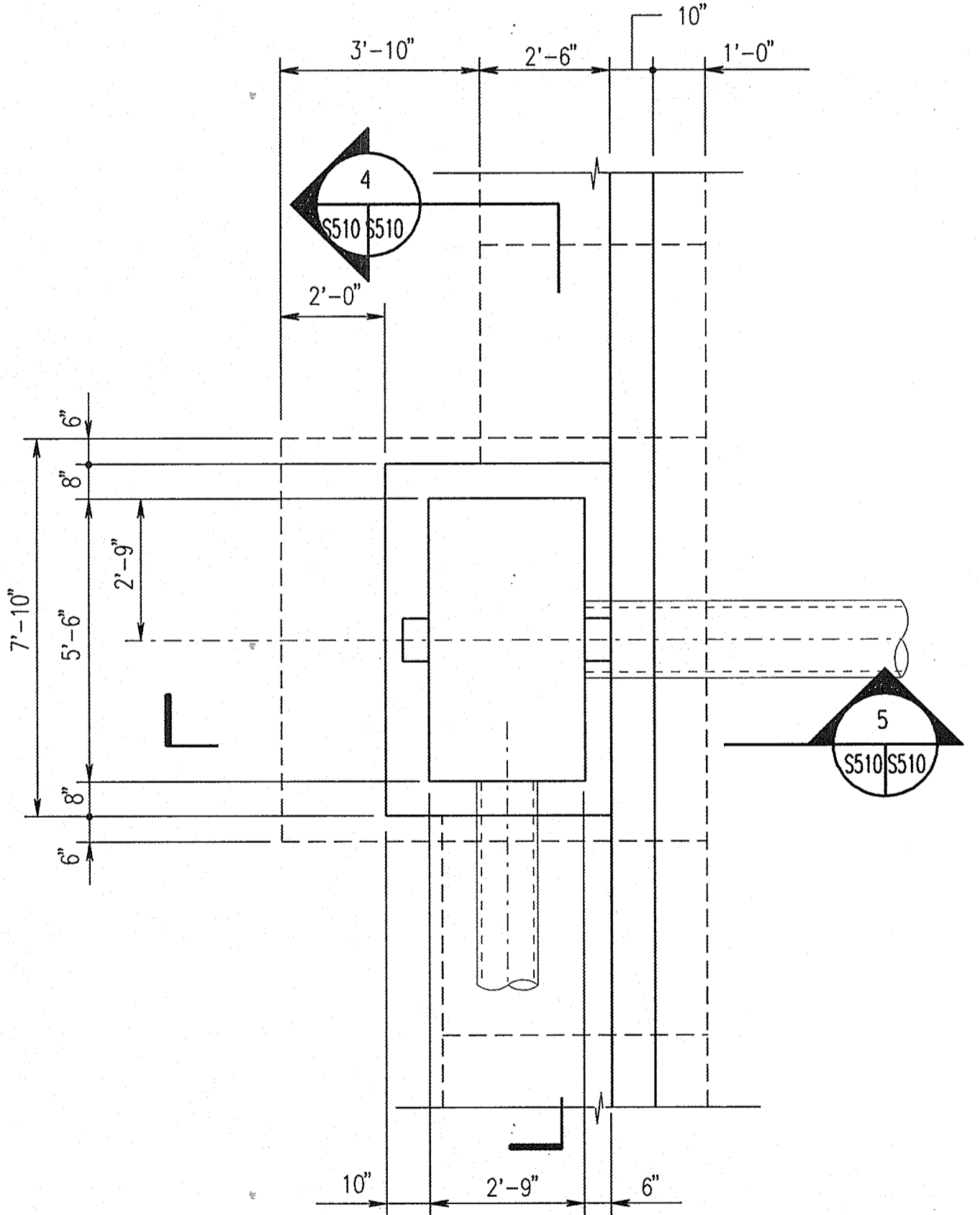


DOWELS
SECTION 1' = #4@6"
SECTION 2' = #5@12"
SECTION 3' = #4@12"

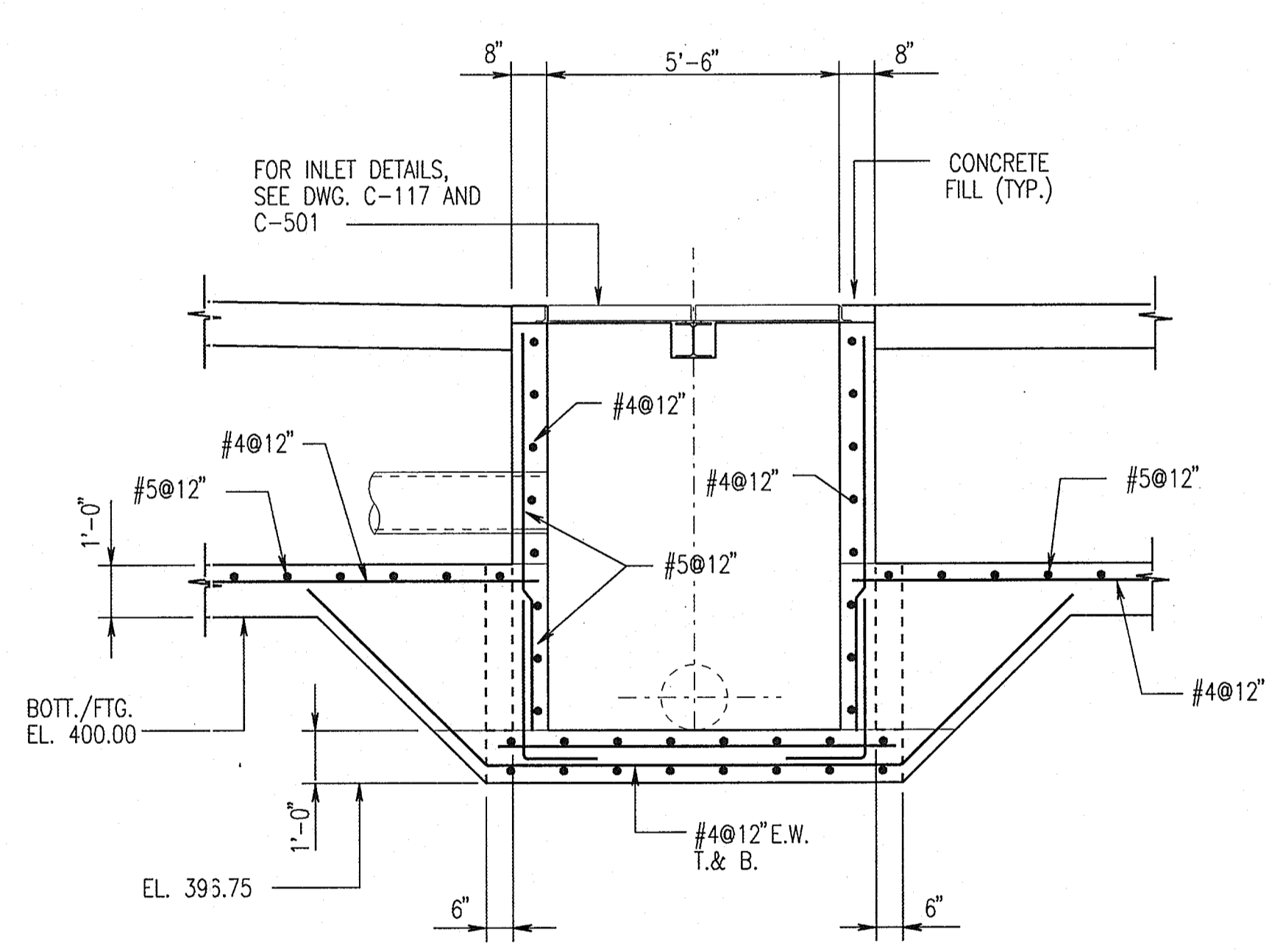
1
SECTION
SCALE: 3/8" = 1'-0"

2
SECTION
SCALE: 3/8" = 1'-0"

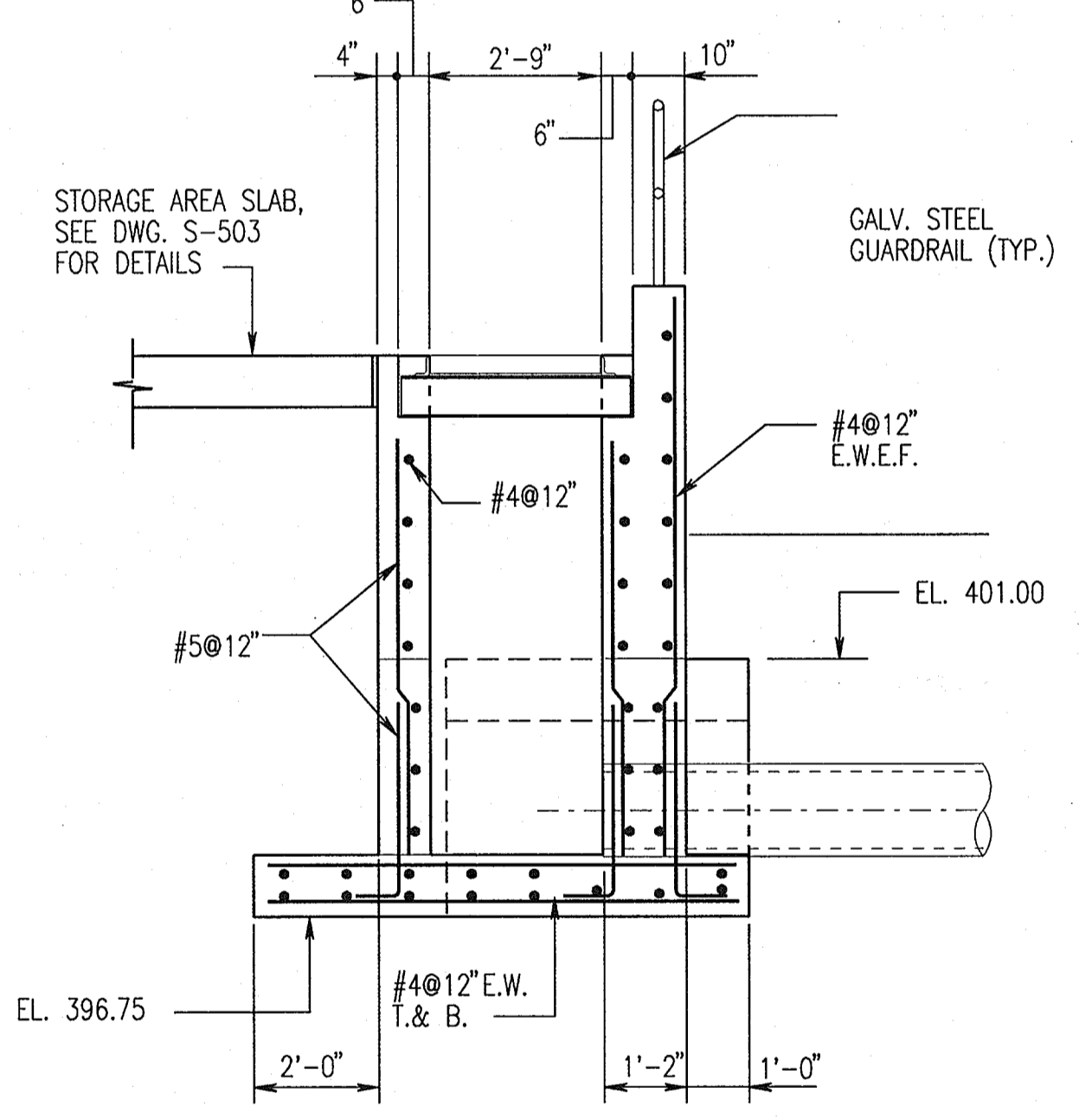
3
SECTION
SCALE: 3/8" = 1'-0"



D
DETAIL
SCALE: 3/8" = 1'-0"



4
SECTION
SCALE: 3/8" = 1'-0"



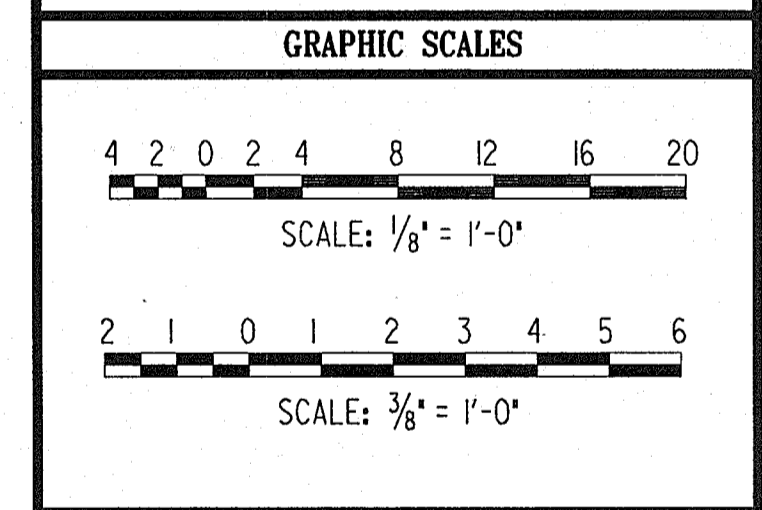
5
SECTION
SCALE: 3/8" = 1'-0"

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WHITMAN, REQUARDT AND ASSOCIATES, LLP
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410 - 235 - 3450

RETAINING WALL #5 ELEVATIONS AND SECTIONS

DRAWING NO. **S510**

Sheet 74 of 77

Scale: AS NOTED

Designed By: WC Drawn By: WRP

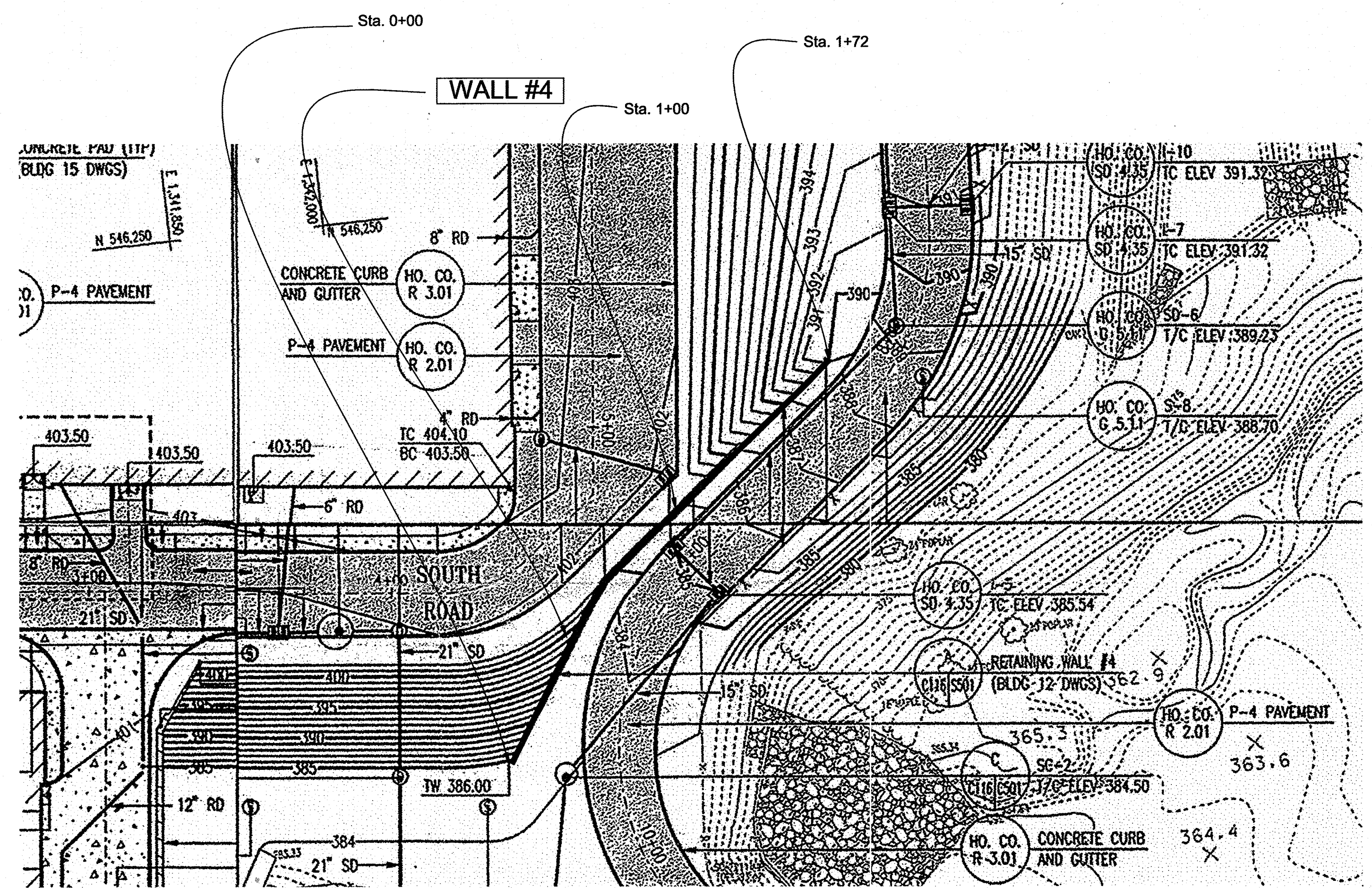
Checked By: A.U.O. Date: 10/25/05

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

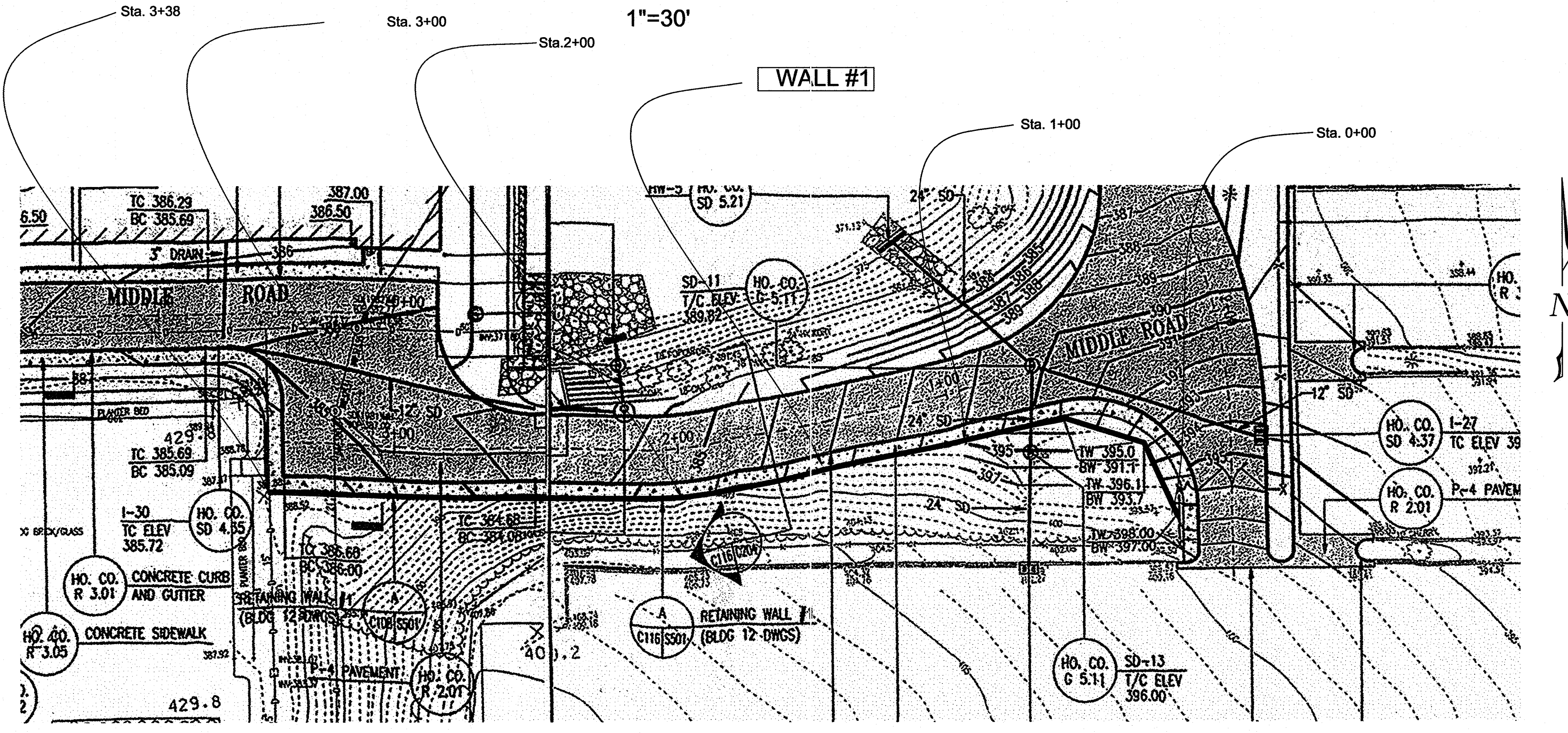
Howard County 3/7/06
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE

Cindy Hamster 3/7/06
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Marsha M. Weyler 3/6/06
DIRECTOR DATE



WALL #4 LOCATION PLAN
1"=30'



WALL #1 LOCATION PLAN
1"=30'

SPECIFICATIONS
KEYSTONE MODULAR CONCRETE BLOCK RETAINING WALL

1.01 GENERAL

1.01 Description
A. Work shall consist of furnishing and construction of a KEYSTONE Retaining Wall System, in accordance with these specifications and in reasonably close conformity with the lines, grades, design, and dimensions shown on the plans.
B. Work includes preparing foundation soil, furnishing and installing leveling pad, unit drainage fill and backfill to the lines and grades shown on the construction drawings.
C. Work includes furnishing and installing geogrid soil reinforcement of the type, size, location, and lengths designated on the construction drawings.

1.02 Delivery, Storage and Handling
A. Contractor shall check all materials upon delivery to assure that the proper type, grade, color, and certification has been received.
B. Contractor shall protect all materials from damage due to job site conditions and in accordance with manufacturer's recommendations. Damaged materials shall not be incorporated into the work.

PART 2: PRODUCTS

2.01 Modular Concrete Retaining Wall Units
A. Modular concrete units shall conform to the following architectural requirements:
1. face color - concrete gray - standard manufacturer's color may be specified by the Owner.
2. face finish - sculptured rock faces in angular to planer configuration. Other face finishes will not be allowed without written approval of Owner.
3. bond configuration - running with bonds normally located at midpoint vertically adjacent units, in both straight and curved alignments.
4. exposed surfaces of units shall be free of chips, cracks or other imperfections when viewed from a distance of 10 feet under diffused lighting.
B. Modular concrete materials shall conform to the requirements of ASTM C-1372 - Standard Specifications for Segmental Retaining Wall Units.
C. Modular concrete units shall conform to the following structural and geometric requirements measured in accordance with appropriate references:
1. compressive strength = 3000 psi minimum;
2. absorption = 8% maximum (8% in northern states) for standard weight aggregates;
3. dimensional tolerance = ± 1/8" from nominal unit dimensions - not including high split face, ± 1/16" unit height - top and bottom planes;
4. unit size - 8" (H) x 18" (W) x 22" (D) minimum;
5. unit weight - 100 lbs/unit minimum for standard weight aggregates.

2.02 Shear Connectors
A. Shear connectors shall be 1/2 inch diameter thermoset isophthalic polyester resin-primed fiberglass reinforcement rods or equivalent to provide connection between vertically and horizontally adjacent units.
B. Strength of shear connectors between vertical adjacent units shall be applicable over a design temperature of 10 degrees F to + 100 degrees F.
C. Shear connectors shall be capable of holding the geogrid in the proper design position during grid pre-tensioning and backfilling.

2.03 Base Leveling Pad Material
A. Material shall consist of a compacted #57 crushed stone base as shown on the construction drawings.

2.04 Unit Drainage Fill
A. Unit drainage fill shall consist of #57 crushed stone

2.05 Reinforced Backfill
A. Reinforced backfill shall type SM, be free of debris and meet the following gradation tested in accordance with ASTM D-422 and meet other properties shown on the plan:

Sieve Size	Percent Passing
2 inch	100-75
3/4 inch	100-75
No. 40	0-60
No. 200	0-45

Plasticity Index (PI) < 15 and Liquid Limit < 40 per ASTM D-4318.
B. Material can be site excavated soils where the above requirements can be met. Unsuitable soils for backfill (high plastic clays or organic soils) shall not be used in the reinforced soil mass.

2.06 Geogrid Soil Reinforcement

aggregates:
inter-unit shear strength - 1000 pif minimum at 2 psi normal pressure;
geogrid/unit peak connection strength - 1000 pif minimum at 2 psi normal force.

2.07 Drainage Pipe
A. The drainage pipe shall be perforated corrugated HDPE pipe manufactured in accordance with ASTM D-1246.

PART 3 EXECUTION

3.01 Excavation
A. Contractor shall excavate to the lines and grades shown on the construction drawings. Owner's representative shall be responsible for inspecting and approving the excavation prior to placement of leveling material or fill soils.

3.02 Base Leveling Pad
A. Leveling pad material shall be placed to the lines and grades shown on the construction drawings, to a minimum thickness of 6 inches and extend laterally a minimum of 6' in front and behind the modular wall unit.
B. Leveling pad shall be prepared to insure full contact to the base surface of the concrete units.

3.03 Modular Unit Installation
A. First course of units shall be placed on the leveling pad at the appropriate line and grade. Alignment and level shall be checked in all directions and insure that all units are in full contact with the base and properly seated.
B. Place the front of units side-by-side. Do not leave gaps between adjacent units. Layout of corners and curves shall be in accordance with manufacturer's recommendations.
C. Install shearconnecting devices per manufacturer's recommendations.
D. Place and compact backfill fill within and behind wall units. Place and compact backfill soil behind drainage fill. Follow wall erection and drainage fill closely with structuro backfill.
E. Maximum stacked vertical height of wall units, prior to unit drainage fill and backfill placement and compaction, shall not exceed three courses.

3.04 Structural Geogrid Installation
A. Geogrid shall be oriented with the highest strength axis perpendicular to the wall alignment.
B. Geogrid reinforcement shall be placed at the strengths, lengths, and elevations shown on the construction design drawings or as directed by the Engineer.
C. The geogrid shall be laid horizontally on compacted backfill and attached to the modular wall units. Place the next course of modular concrete units over the geogrid. The geogrid shall be pulled taut, and anchored prior to backfill placement on the geogrid.
D. Geogrid reinforcements shall be continuous throughout their embedment lengths and placed side-by-side to provide 100% coverage at each level. Spliced connections between shorter pieces of geogrid or gaps between adjacent pieces of geogrid are not permitted.

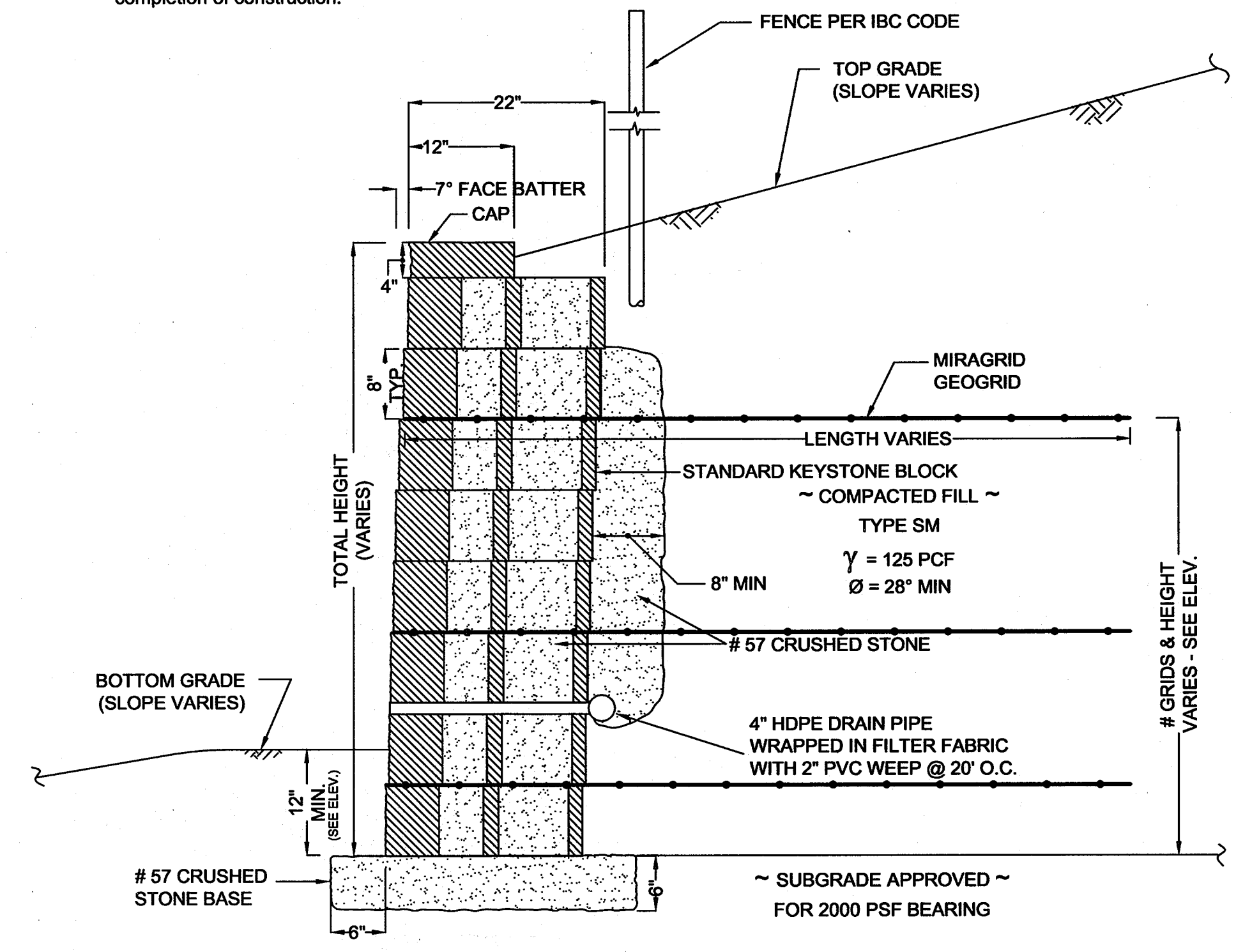
3.05 Reinforced Backfill Placement
A. Reinforced backfill shall be placed, spread, and compacted in such a manner that minimizes the development of slack in the geogrid and installation damage.
B. Reinforced backfill shall be placed and compacted in lifts not to exceed 6 inches where hand compaction is used, or 8 - 10 inches where heavy compaction equipment is used. Lift thickness shall be decreased to achieve the required density as required.
C. Reinforced backfill shall be compacted to 95% of the maximum density as determined by ASTM D698. The moisture content of the backfill material prior to and during compaction shall be uniformly distributed throughout each layer and shall be + 3% to - 3% of optimum.
D. Only lightweight hand-operated equipment shall be allowed within 3 feet from the tail of the modular concrete unit.
E. Tracked construction equipment shall not be operated directly upon the geogrid reinforcement. A minimum fill thickness of 6 inches is required prior to operation of tracked vehicles over the geogrid. Tracked vehicle turning should be kept to a minimum to prevent tracks from displacing the fill and damaging the geogrid.
F. Rubber tired equipment may pass over geogrid reinforcement at slow speeds, less than 10 MPH. Sudden braking and sharp turning shall be avoided.
G. At the end of each day's operation, the Contractor shall slope the last lift of reinforced backfill away from the wall units to direct runoff away from wall face. The Contractor shall not allow surface runoff from adjacent areas to enter the wall construction site.

3.06 Cap Installation
A. Cap units shall be glued to underlying units with an all-weather adhesive recommended by the manufacturer.

3.07 Field Quality Control
A. The Owner shall engage inspection and testing services, including independent laboratories, to provide quality assurance and testing services during construction.
B. As a minimum, quality assurance testing should include foundation soil inspection, soil and backfill testing, verification of design parameters, and observation of construction for general compliance with design drawings and specifications.

NOTES:

- 1.) No trees shall be planted within 10 feet of the top of the retaining wall.
- 2.) Retaining walls shall only be constructed under the observation of a registered professional engineer and a (NICET, WACEL, or equiv.) certified soils technician.
- 3.) The required bearing pressure beneath the wall system shall be verified in the field by a certified soils technician. Testing documentation must be provided to the Howard County Inspector prior to start of construction. The required bearing test shall be the Dynamic Cone Penetrometer test ASTM STP-399.
- 4.) The suitability of fill material shall be confirmed by the on-site soils technician. Each 8" lift must be compacted to a minimum 95% standard proctor density and the testing report shall be made available to the Howard County Inspector upon completion of construction.



TYPICAL WALL SECTION
N.T.S.

REVISIONS		
Δ	RETAINING WALL DETAILS	10/20/05

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HILLIS-CARNES
ENGINEERING ASSOCIATES, INC.

12011 Guilford Road Suite 106 Annapolis Junction, Maryland 20701
Balto. (410) 880-4788 D.C. (301) 470-4239 Fax (410) 880-4098

WHITMAN, REQUARDT AND ASSOCIATES, LLP
801 S. CAROLINE STREET
BALTIMORE, MARYLAND 21231
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**RETAINING WALL #1 & #4
SECTION AND
SPECIFICATIONS**

DRAWING NO.
S511

Sheet 75 of 77

Scale: AS SHOWN HCEA No: 05280-S
Designed By: CX Drawn By: CX
Checked By: RWS Date: 10/17/05

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 3/7/00
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE

[Signature] 3/7/00
CHIEF, DIVISION OF LAND DEVELOPMENT W DATE

[Signature] 3/6/00
DIRECTOR DATE

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△	RETAINING WALL DETAILS 10/20/05

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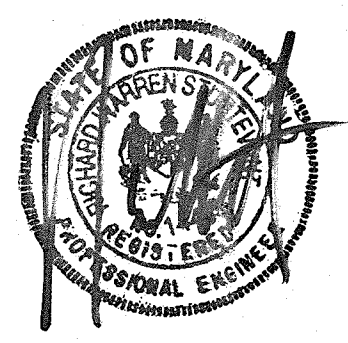
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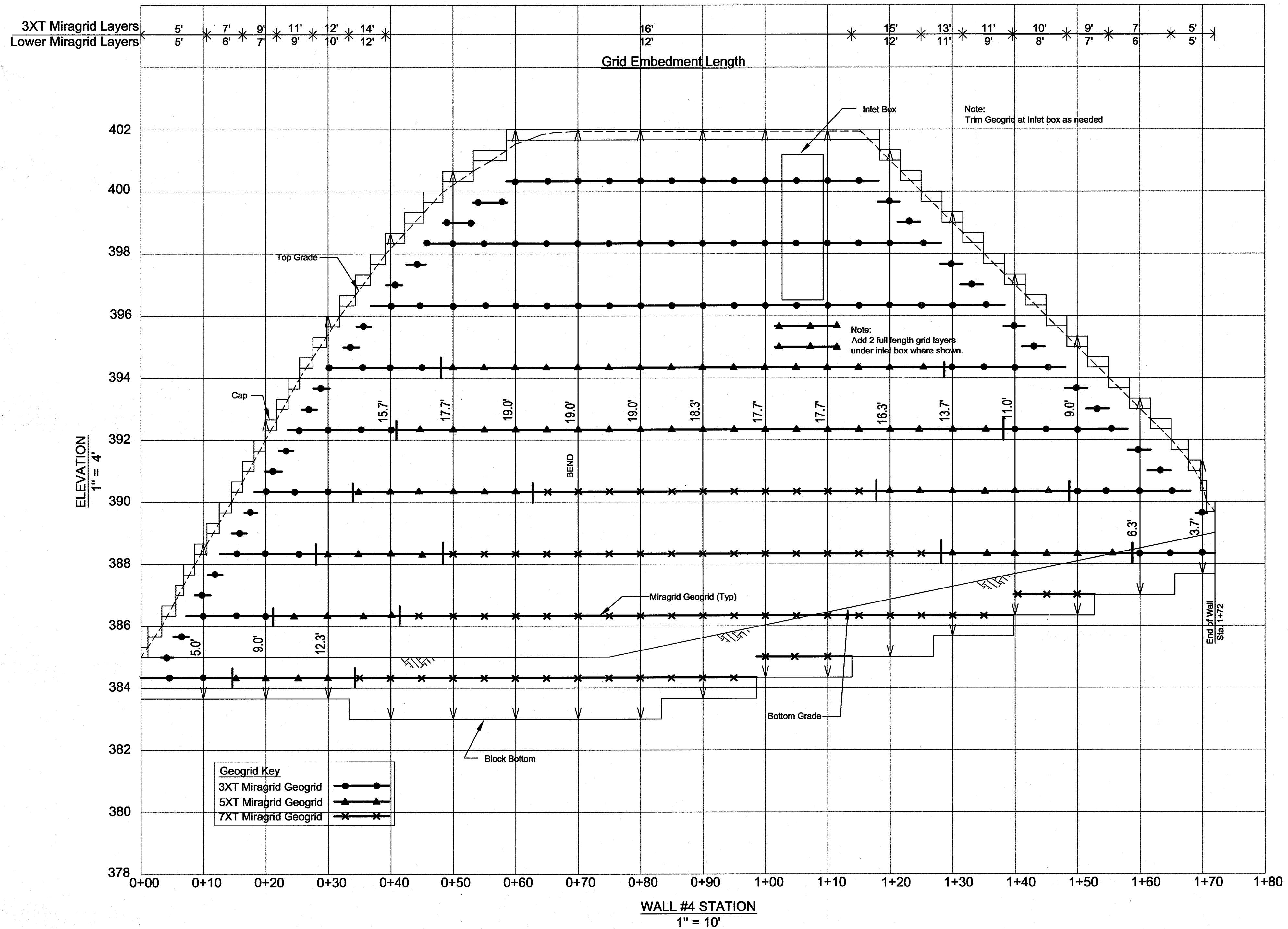
RETAINING WALL #4
 ELEVATION



DRAWING NO.
S513

Sheet 77 of 77

Scale: AS SHOWN HCEA No: 05280-S
 Designed By: CX Drawn By: CX
 Checked By: RWS Date: 10/17/05



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[Signature] DATE 3/7/06
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK
[Signature] DATE 3/7/06
 CHIEF, DIVISION OF LAND DEVELOPMENT
[Signature] DATE 3/9/06
 DIRECTOR

SDP.05.050

GENERAL STRUCTURAL NOTES

- A. BUILDING CODES AND STANDARDS**
- THE FOLLOWING CODES AND STANDARDS, INCLUDING ALL SPECIFICATIONS REFERENCED WITHIN, SHALL APPLY TO THE DESIGN, CONSTRUCTION, QUALITY CONTROL AND SAFETY OF ALL WORK PERFORMED ON THE PROJECT.
 - "INTERNATIONAL BUILDING CODE - 2003", INTERNATIONAL CODE COUNCIL
 - MINIMUM DESIGN LOADS FOR BUILDING AND OTHER STRUCTURES", (ANSI/ASCE 7-02-2002) AMERICAN SOCIETY OF CIVIL ENGINEERS.
 - ADDITIONAL CODES FOR MATERIALS SHALL BE FOUND IN THE APPROPRIATE SECTIONS THAT FOLLOW. SEE THOSE SECTIONS FOR THE APPLICABLE CODES.
- B. DESIGN LOADS**
- GRAVITY - LIVE LOADS
LIVE LOAD REDUCTION APPLIED PER CODE
 - LATERAL LOADS - WIND
 - BASIC WIND SPEED (3-SECOND GUST): 90 MPH
 - IMPORTANCE FACTOR: 1.0
 - EXPOSURE CATEGORY: C
 - INTERNAL PRESSURE COEFFICIENT: $C_{pi} = +/- 0.18$
 - LATERAL LOADS - SEISMIC
 - SEISMIC USE GROUP: I
 - SEISMIC IMPORTANCE FACTOR: 1.0
 - MAPPED SPECTRAL RESPONSE COEFFICIENTS:
 - $S_s = 0.254$
 - $S_1 = 0.121$
 - SITE CLASS: D
 - SPECTRAL RESPONSE COEFFICIENTS:
 - $S_{DS} = 0.169$
 - $S_{D1} = 0.089$
 - SEISMIC DESIGN CATEGORY: B
 - LATERAL LOADS - EARTH PRESSURE
 - ACTIVE CONDITION (CANTILEVERED RETAINING WALLS)
50/psf/FT OF DEPTH
- C. FOUNDATION / EARTH WORK / GEOTECHNICAL REPORT**
- DESIGN DATA:
 - FOUNDATIONS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT PREPARED BY HILLIS CARNES DATED 3 JULY 2008, REPORT NUMBER 035041. SEE THAT REPORT FOR ADDITIONAL REQUIREMENTS.
 - ALL FOUNDATIONS SHALL BEAR A MINIMUM OF 2'-6" BELOW GRADE. IN CASE OF CONFLICT, NOTIFY THE ARCHITECT AND STRUCTURAL ENGINEER IN ADVANCE OF ANY CONSTRUCTION TO ALLOW FOR ADJUSTMENT.
 - FOUNDATION SYSTEM
 - SPREAD FOOTINGS
 - BUILDING SPREAD AND STRIP FOOTINGS SHALL BEAR ON UNDISTURBED NATURAL SOILS OR PROPERLY PLACED AND COMPACTED ENGINEERED FILL WITH AN ALLOWABLE BEARING PRESSURE OF 2,000 PSF.
 - GENERAL
 - CONTRACTOR SHALL VERIFY ALL EXISTING FIELD CONDITIONS THAT MAY AFFECT THE INSTALLATION OF THE FOUNDATION SYSTEM AS SHOWN PRIOR TO STARTING WORK. SEE ALSO NOTES UNDER THE "CONSTRUCTION" SECTION.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PROTECTING ALL EXISTING UTILITIES, EXISTING STRUCTURES, ETC., WHETHER INDICATED OR NOT, WHICH MAY BE AFFECTED BY THE CONSTRUCTION PROCESS.
 - UTILITY LINES SHALL NOT BE PLACED THROUGH OR BELOW FOUNDATIONS WITHOUT THE STRUCTURAL ENGINEER'S APPROVAL.
 - BEARING ELEVATIONS INDICATED ON THE DRAWINGS ARE ESTIMATED. PRIOR TO PLACING FOUNDATIONS, AN EXPERIENCED, QUALIFIED GEOTECHNICAL ENGINEER SHALL MAKE DETERMINATION OF FINAL BEARING ELEVATIONS AND VERIFICATION OF ALLOWABLE BEARING PRESSURE.
 - THE SLOPE BETWEEN THE LOWER EDGES OF ADJACENT FOUNDATIONS SHALL NOT EXCEED 45 DEGREES WITH THE HORIZONTAL, UNLESS INDICATED OTHERWISE ON PLANS. MAINTAIN A 1:1 SLOPE FROM BOTTOM EDGE OF ANY EXCAVATION.
 - CONCRETE FOR FOUNDATIONS SHALL BE POURED ON THE SAME DAY SUBGRADE APPROVAL IS GIVEN BY THE GEOTECHNICAL ENGINEER.
 - FOLLOWING REQUIRED STRIPPING OPERATIONS, ANY PROOFROLLING SHALL BE AS DIRECTED BY AN EXPERIENCED, QUALIFIED GEOTECHNICAL ENGINEER. THE PURPOSE OF THE PROOFROLLING WILL BE TO LOCATE ANY ISOLATED AREAS OF SOFT OR LOOSE SOILS REQUIRING IMPROVEMENT OR REPLACEMENT. SOFT AREAS SHALL BE UNDERCUT AND REPLACED BY PROPERLY COMPACTED MATERIALS.

- SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR DETAILED INFORMATION REGARDING FINISHES, FIREPROOFING, WATERPROOFING, ETC.
 - SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF MASONRY AND DRYWALL NON-LOADBEARING PARTITIONS, PROVIDE SLP CONNECTIONS THAT ALLOW VERTICAL MOVEMENT AT THE HEADS OF ALL SUCH PARTITIONS. UNLESS SHOWN ON THE DRAWINGS, THE CONNECTIONS SHALL BE DESIGNED TO SUPPORT THE TOP OF THE WALLS LATERALLY FOR THE CODE REQUIRED LATERAL LOAD. PROVIDE COMPRESSIBLE FIRSFASING AT THE TOP OF WALL AS REQUIRED BY ARCHITECTURAL DRAWINGS.
 - IN CASE OF CONFLICT BETWEEN THE GENERAL NOTES, DETAILS, AND SPECIFICATIONS, THE MOST RIGID REQUIREMENTS SHALL GOVERN.
 - WORK NOT INCLUDED ON THE DRAWINGS BUT IMPLIED TO BE SIMILAR TO THAT SHOWN AT CORRESPONDING PLACES ELSEWHERE ON THE DRAWINGS SHALL BE REPEATED.
 - DRAWINGS SHALL NOT BE SCALED TO OBTAIN LAYOUT INFORMATION OR DIMENSIONS.
- D. THE CONTRACTOR SHALL SUBMIT, FOR REVIEW, DRAWINGS AND CALCULATIONS SIGNED AND SEALED BY A STRUCTURAL ENGINEER REGISTERED IN THE PROJECT'S JURISDICTION FOR THE FOLLOWING ASSEMBLIES AS WELL AS ANY OTHER PRE-ENGINEERED SYSTEMS. THIS REVIEW SHALL BE FOR GENERAL CONFORMANCE WITH THE PROJECT PARAMETERS AS INDICATED ON THE DRAWINGS AND IN THE GENERAL NOTES. THE DESIGN OF THESE ASSEMBLIES IS THE RESPONSIBILITY OF THE ENGINEER WHO HAS SIGNED AND SEALED THESE DRAWINGS AND CALCULATIONS.**
- (1) METAL RAILINGS: DESIGNS SHALL TAKE INTO ACCOUNT ALL VERTICAL AND LATERAL LOADS REQUIRED BY APPLICABLE BUILDING CODES.

- E. STRUCTURAL INSPECTION AND TESTING**
- THE OWNER WILL ENGAGE A TESTING AGENCY TO PROVIDE SERVICES INDICATED IN THE STRUCTURAL GENERAL NOTES AND IN THE CONTRACT SPECIFICATION.
 - AT A MINIMUM, THE INSPECTION WILL CONSIST OF VERIFYING CONFORMANCE OF THE CONSTRUCTION WITH THE STRUCTURAL CONTRACT DOCUMENTS.
 - SEE SPECIFIC SECTION OF THESE NOTES AND/OR SPECIFICATIONS FOR TESTING AND INSPECTION SCOPE FOR CONCRETE, STEEL, MASONRY, ETC.
 - THESE INSPECTION SERVICES DO NOT RELIEVE THE GENERAL CONTRACTOR OF RESPONSIBILITY FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS.
 - WHERE SPECIAL INSPECTIONS ARE REQUIRED BY THE BUILDING CODE OR LOCAL JURISDICTION, THE OWNER'S TESTING AGENCY SHALL PERFORM THE SPECIAL INSPECTION FOR THE SCOPE SHOWN IN THE BUILDING CODE.
- F. CONCRETE**
- CODES
 - "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE, ACI 318", AMERICAN CONCRETE INSTITUTE
 - "ACI MANUAL OF CONCRETE PRACTICE - PARTS 1 THROUGH 5".
 - MATERIALS
 - THE FOLLOWING ASTM STANDARDS AND DESIGN STRESSES SHALL BE USED FOR THE APPROPRIATE MATERIALS USED IN THE CONSTRUCTION OF THIS PROJECT.

APPLICATION	f_c @ 28 DAYS	WEIGHT PCE	W/C (MAX)
SLABS-ON-GRADE (INTERIOR)	3000	145	0.50
SLABS-ON-GRADE (EXTERIOR)	3500	145	0.45
FOOTINGS	3000	145	0.55
WALLS	4000	145	0.50
 - PUMP MIXES: MAXIMUM WATER/CEMENT RATIO MUST BE MAINTAINED. IF ADDITIONAL WORKABILITY IS REQUIRED FOR PUMPED PLACEMENT, THE HIGH OR MID-RANGE WATER REDUCERS SHALL BE USED IN LIEU OF ADDITIONAL WATER. WATER HELD BACK AT THE PLANT SHALL BE NOTED ON THE BATCH TICKET AND RECORDED ON THE INSPECTOR'S REPORT WHEN SAMPLE CYLINDERS ARE MADE.
 - CEMENT: ASTM C150, TYPE II FOR CONCRETE IN CONTACT WITH EARTH
 - CEMENT SUBSTITUTES: ASTM C595, TYPE IS (LIMIT TO 50% MAX OF CHEMISTICALS CONTENT BY WEIGHT)
 - AGGREGATES: ASTM C33 (NORMAL WEIGHT)
 - AIR-ENTRAINING ADMIXTURE TO COMPLY WITH ASTM C260.

SLAB ON GRADE (INTERIOR)*	3% ± 1/2%
SLAB ON GRADE (EXTERIOR)	6% ± 1/2%
FOUNDATIONS	6% ± 1/2%

 * AIR CONTENT OF TROWEL FINISHED FLOORS SHALL NOT EXCEED 3%
 - REINFORCEMENT:

DEFORMED REINFORCING BARS	ASTM A615, GRADE 60
WELDED WIRE FABRIC (WWF)	ASTM A185
 - ANCHORING SYSTEM:

ADHESIVE REINFORCING/ANCHORS	HILTI HIT HY-150 SYSTEM OR HVA SYSTEM OR APPROVED EQUAL
EXPANSION BOLTS	HILTI Kwik Bolt 3 OR APPROVED EQUAL

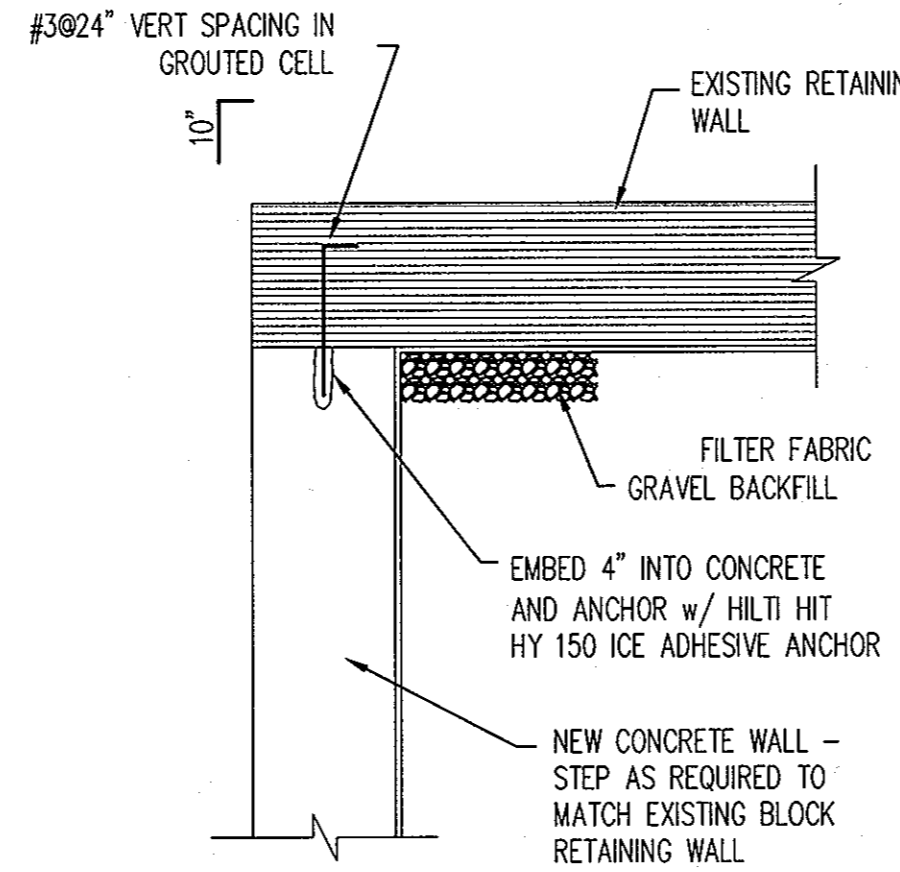
- 3. CAST-IN-PLACE**
- REINFORCING STEEL CLEAR COVER SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE:
 - NON-POST-TENSIONED CONCRETE:
 - CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH:
 - CONCRETE EXPOSED TO EARTH OR WEATHER:

#6 BARS AND LARGER	2"
#5 BARS AND SMALLER	1 1/2"
 - CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:

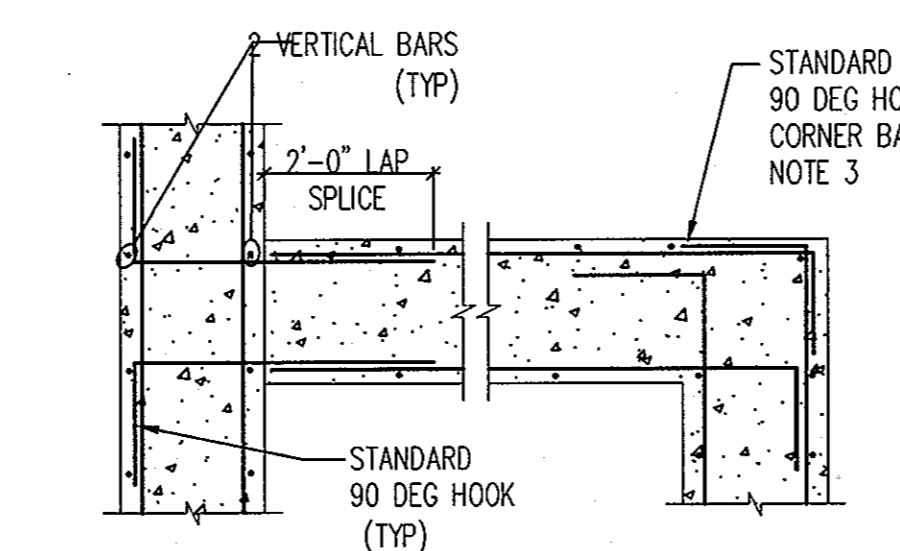
#11 BARS AND SMALLER	3/4"
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 - BEAMS AND COLUMNS:

PRIMARY REINFORCEMENT, TIES, STIRRUPS, AND SPIRALS	1 1/2"
--	--------
 - NO SPLICES OF REINFORCEMENT SHALL BE PERMITTED EXCEPT AS DETAILED OR AUTHORIZED BY THE STRUCTURAL ENGINEER. MAKE BARS CONTINUOUS AROUND CORNERS. WHEN PERMITTED, SPLICES SHALL BE MADE BY CONTACT TENSION LAP SPLICES, UNLESS OTHERWISE NOTED.
 - WELDED WIRE FABRIC REINFORCEMENT SHALL BE SUPPLIED IN SHEETS, EXCEPT FOR SLAB ON GRADE CONSTRUCTION WHERE ROLLS MAY BE USED. LAP TWO FULL MESH LENGTHS AT SPLICES AND WIRE TOGETHER.
 - NO WELDING OF REINFORCING SHALL BE PERMITTED SPECIFICALLY CALLED FOR OR APPROVED BY THE STRUCTURAL ENGINEER.
 - CONSTRUCTION JOINTS AND CONTROL JOINTS IN SLABS ON GRADE SHALL BE ARRANGED TO LIMIT MAXIMUM LENGTH BETWEEN JOINTS TO 30'-0" IN ANY DIRECTION. ALLOW A MINIMUM OF 48 HOURS TIME BETWEEN PLACEMENT OF ADJACENT SECTIONS.
 - NO SLEEVES SHALL BE PLACED THROUGH ANY CONCRETE ELEMENT UNLESS SHOWN ON THE STRUCTURAL DRAWINGS, APPROVED SLEEVING SHOP DRAWINGS OR SPECIALLY AUTHORIZED IN WRITING BY THE STRUCTURAL ENGINEER.
 - ALL INSERTS AND SLEEVES SHALL BE CAST-IN-PLACE WHENEVER FEASIBLE. DRILLED OR POWDER ACTUATED FASTENERS WILL BE PERMITTED ONLY WHEN PROVEN TO THE SATISFACTION OF THE STRUCTURAL ENGINEER THAT THE FASTENERS WILL NOT SPALL THE CONCRETE NOR DAMAGE ANY STRUCTURAL ELEMENT AND HAVE THE SAME CAPACITY AS CAST-IN-PLACE INSERTS.
 - CORE DRILLING OF FOUNDATIONS, SHALL NOT BE PERMITTED UNLESS AUTHORIZED IN WRITING BY THE STRUCTURAL ENGINEER.
 - WHEN INSTALLING EXPANSION BOLTS OR ADHESIVE ANCHORS, THE CONTRACTOR SHALL TAKE MEASURES TO AVOID DRILLING OR CUTTING OF ANY EXISTING REINFORCING AND DESTRUCTION OF CONCRETE. HOLES SHALL BE CLEANED PER MANUFACTURER'S INSTRUCTIONS PRIOR TO PLACING BOLTS OR ADHESIVE ANCHORS. TORQUE BOLTS PER MANUFACTURER'S INSTRUCTIONS.
 - CHAMFER ALL EXPOSED CONCRETE CORNERS, 3/4" x 3/4" MINIMUM, UNLESS NOTED OTHERWISE ON ARCHITECTURAL DRAWINGS.
 - THE CONCRETE SLABS SHALL BE FINISHED, WITHIN A.C.I. TOLERANCE, TO THE ELEVATIONS INDICATED ON THE DRAWINGS.
- INSPECTION AND TESTING
 - THE OWNER WILL ENGAGE A TESTING AGENCY TO PROVIDE SERVICES AS INDICATED BELOW AND SUBMIT REPORTS.

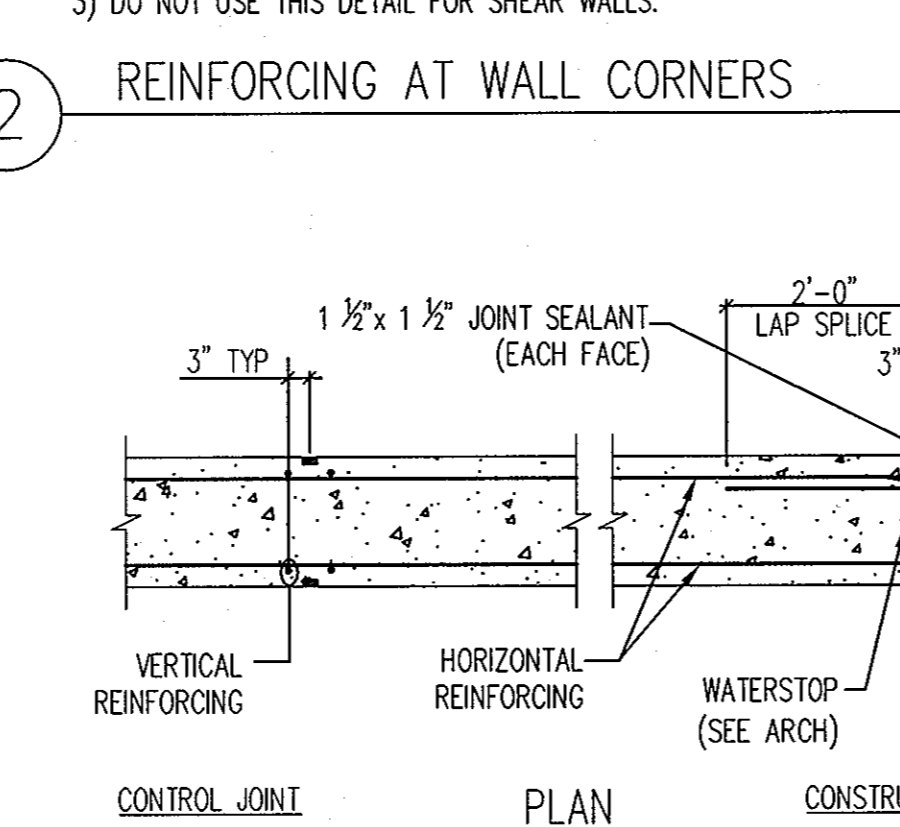
- b. CAST-IN-PLACE CONCRETE:**
- THE AGENCY SHALL INSPECT THE FORM WORK AND REINFORCING STEEL PLACEMENT FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS AND SHOP DRAWINGS. THE AGENCY SHALL MONITOR ALL STRUCTURAL CONCRETE PLACEMENT FOR CONFORMANCE WITH APPLICABLE ACI REQUIREMENTS.
 - SAMPLE FRESH CONCRETE IN ACCORDANCE WITH ASTM C172. MOLD TEST CYLINDERS IN ACCORDANCE WITH ASTM C31.
 - THE FOLLOWING NUMBER OF TEST CYLINDERS SHALL BE CAST FOR EACH DAY'S POUR OR EACH 50 CUBIC YARDS, WHICHEVER RESULTS IN MORE TEST CYLINDERS. FOR FOOTINGS AND OTHER STRUCTURAL CONCRETE: 200 DAYS, LAB CURED; 2828 DAYS, LAB CURED; 2865 DAYS, LAB CURED
 - THE AGENCY WILL MAKE ADDITIONAL TESTS OF IN-PLACE CONCRETE AT THE CONTRACTOR'S EXPENSE WHEN THE TEST RESULTS INDICATE SPECIFIED CONCRETE STRENGTHS HAVE NOT BEEN ATTAINED, AS DIRECTED BY THE STRUCTURAL ENGINEER.



1 EXISTING RETAINING WALL CONNECTION DETAIL SCALE: 3/8"=1'-0"

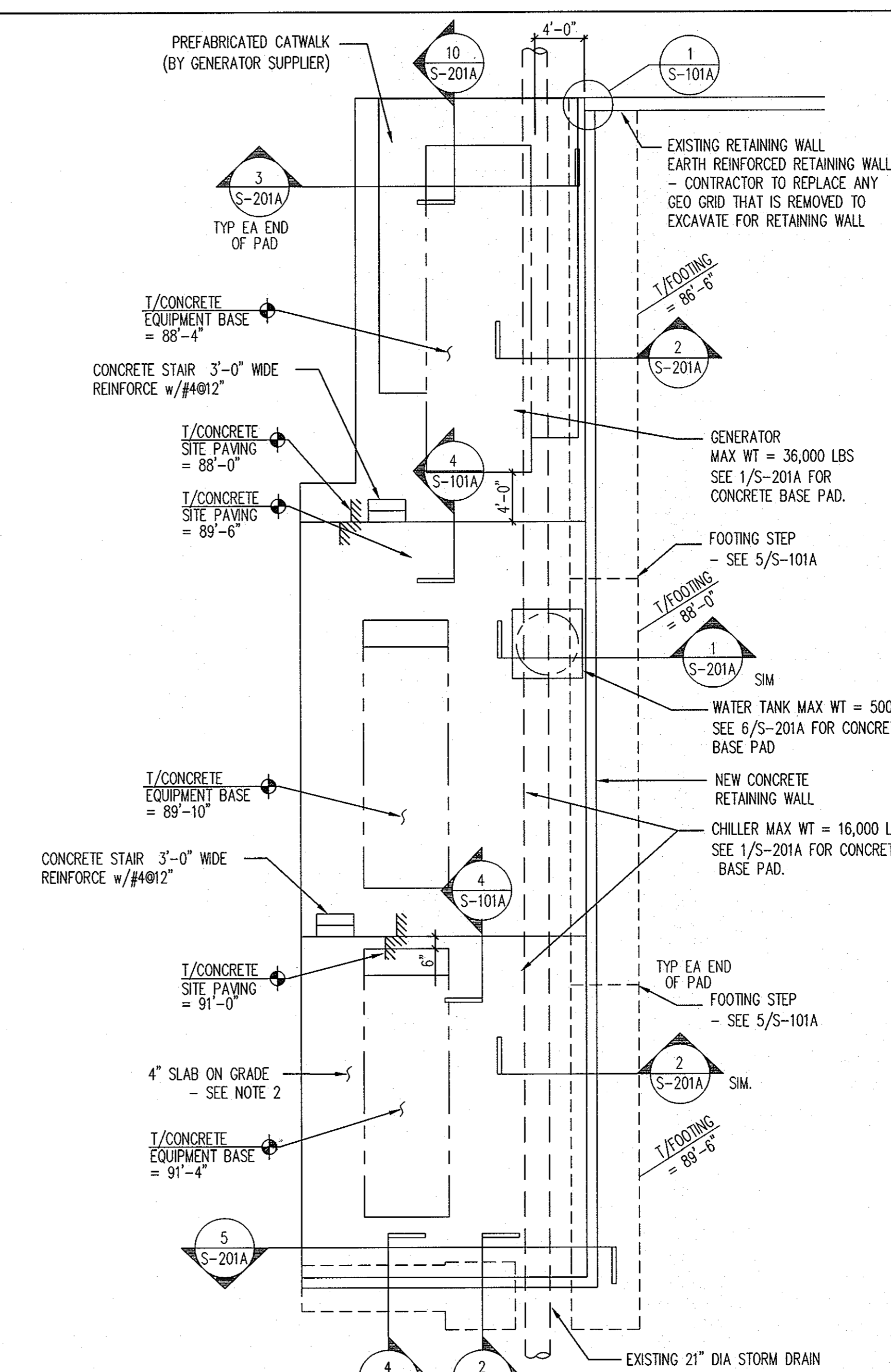


2 REINFORCING AT WALL CORNERS NTS



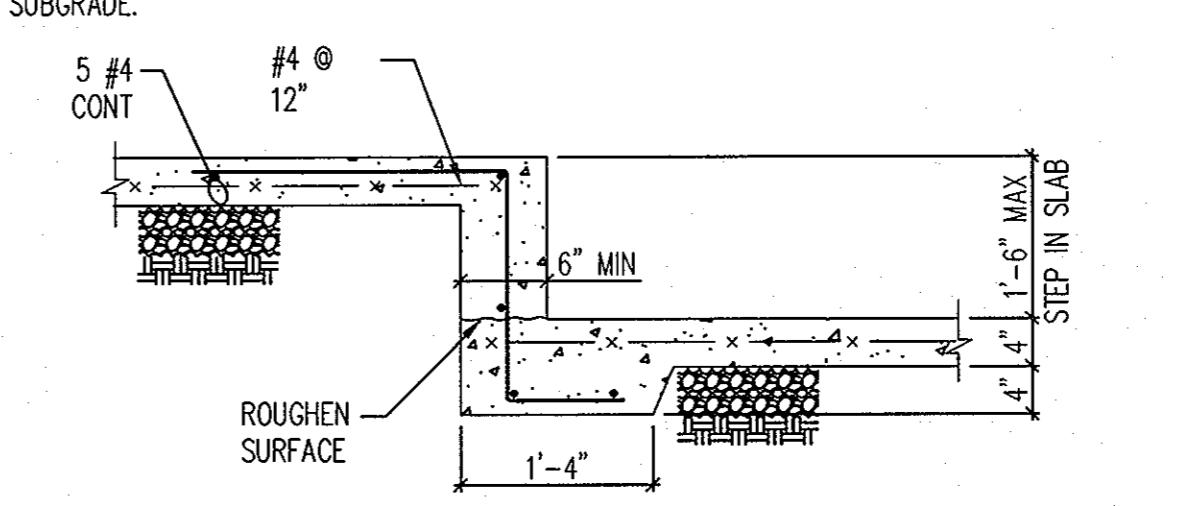
3 VERTICAL JOINTS - CONCRETE WALL NTS

EXISTING JHU APL BUILDING NO.24

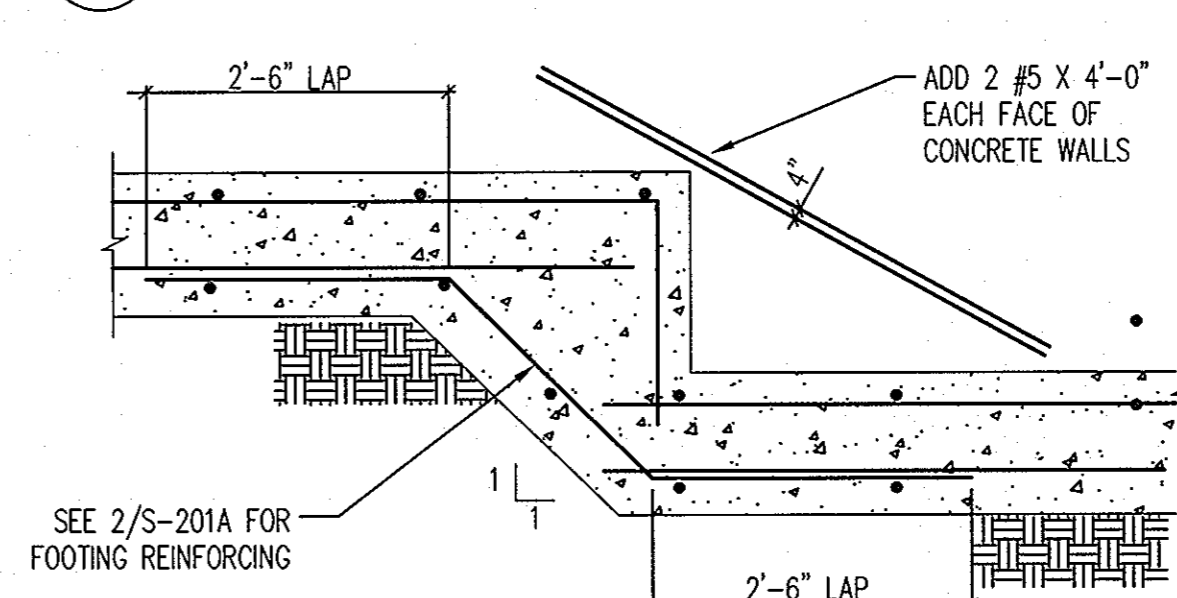


EXTERIOR EQUIPMENT PAD PLAN SCALE: 1/8"=1'-0"

- PLAN NOTES:**
- TOP OF SLAB ON GRADE ELEVATION - SEE SHEET 17.
 - 4" THICK CONCRETE SLAB ON GRADE REINFORCED WITH 6x6 W2.0xW2.0 WWF PLACED OVER A MIN. 4" LAYER OF CLEAN WELL - GRADED GRAVEL OR CRUSHED STONE OVER PROPERLY COMPACTED SUBGRADE.



4 STEP IN SLAB ON GRADE NTS



5 TYPICAL STEPPED FOOTING NTS

APPROVED: HOWARD COUNTY DEPARTMENT OF Planning & Zoning
 [Signature] 10/6/08
 Director Date

[Signature] 10/7/08
 Chief, Division of Land Development Date

[Signature] 10/6/08
 Chief, Development Engineering Division Date

TOTAL SITE SOLUTIONS
 Bridging the Gap Between IT & Facilities
 a FORTRIS INTERNATIONAL GROUP company
 7226 LEE FOREST DRIVE
 COLUMBIA, MD 21046
 410-423-7300 (tel)
 410-423-7441 (fax)

RATHGEBER/GOSS ASSOCIATES
 Consulting Structural Engineers
 15871 Grabs Branch Way
 Rockville, Maryland 20855
 Phone: (301) 590-0071 Fax: (301) 590-0073
 PROJECT NO. 8001.23

PREPARED FOR:
 THE JOHN'S HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY
 JOHNS HOPKINS ROAD
 LAUREL MD 20723-6099

JHU / APPLIED PHYSICS LABORATORY
 SYSTEMS INTEGRATION BUILDINGS AND VAN PAD
 Revised SDP SET

JOB NO:	30-07-4163
DATE:	05/14/2008
DRAWN BY:	KSB
CHECKED BY:	CEJ
SCALE:	AS SHOWN
REVISIONS:	
△ RETAINING WALL # 9 & SHEETS T1A & T1B ADDED	8/21/08

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 12988, EXPIRATION DATE: 4-15-2010

[Signature]
 PROFESSIONAL ENGINEER
 8/21/08

RETAINING WALL #9 AND EXTERIOR EQUIPMENT PAD NOTES AND PLAN

SDP-05-050

JHU / APPLIED PHYSICS
 LABORATORY
 SYSTEMS INTEGRATION BUILDINGS
 AND VAN PAD
 Revised SDP SET

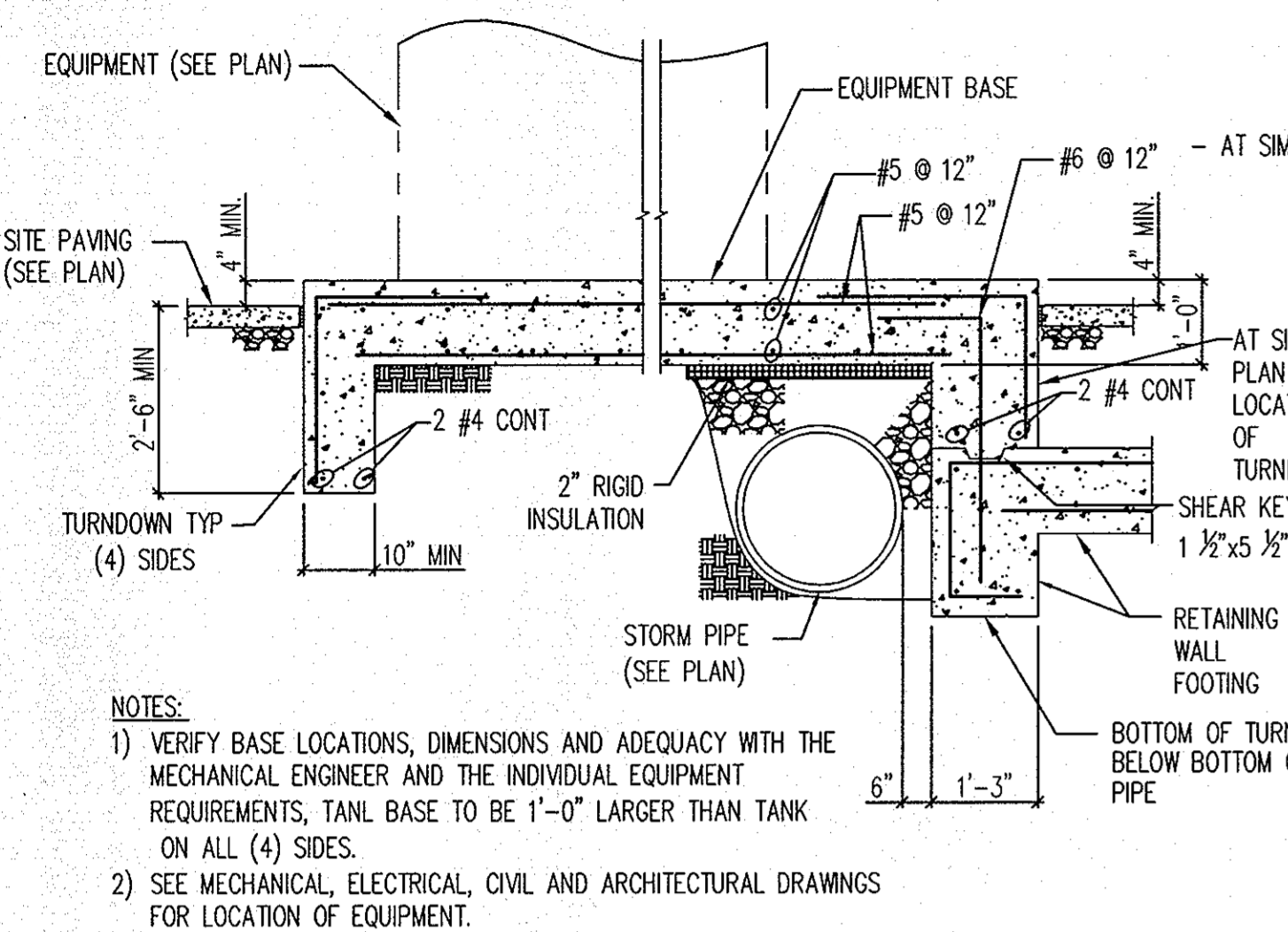
JOB NO:	30-07-4163
DATE:	05/14/2008
DRAWN BY:	KSB
CHECKED BY:	CEJ
SCALE:	AS SHOWN
REVISIONS:	
REVISIONS:	RETAINING WALL # 9 SHEETS TIA & TIB ADDED 8/21/08

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 12928, EXPIRATION DATE: 4-15-2010

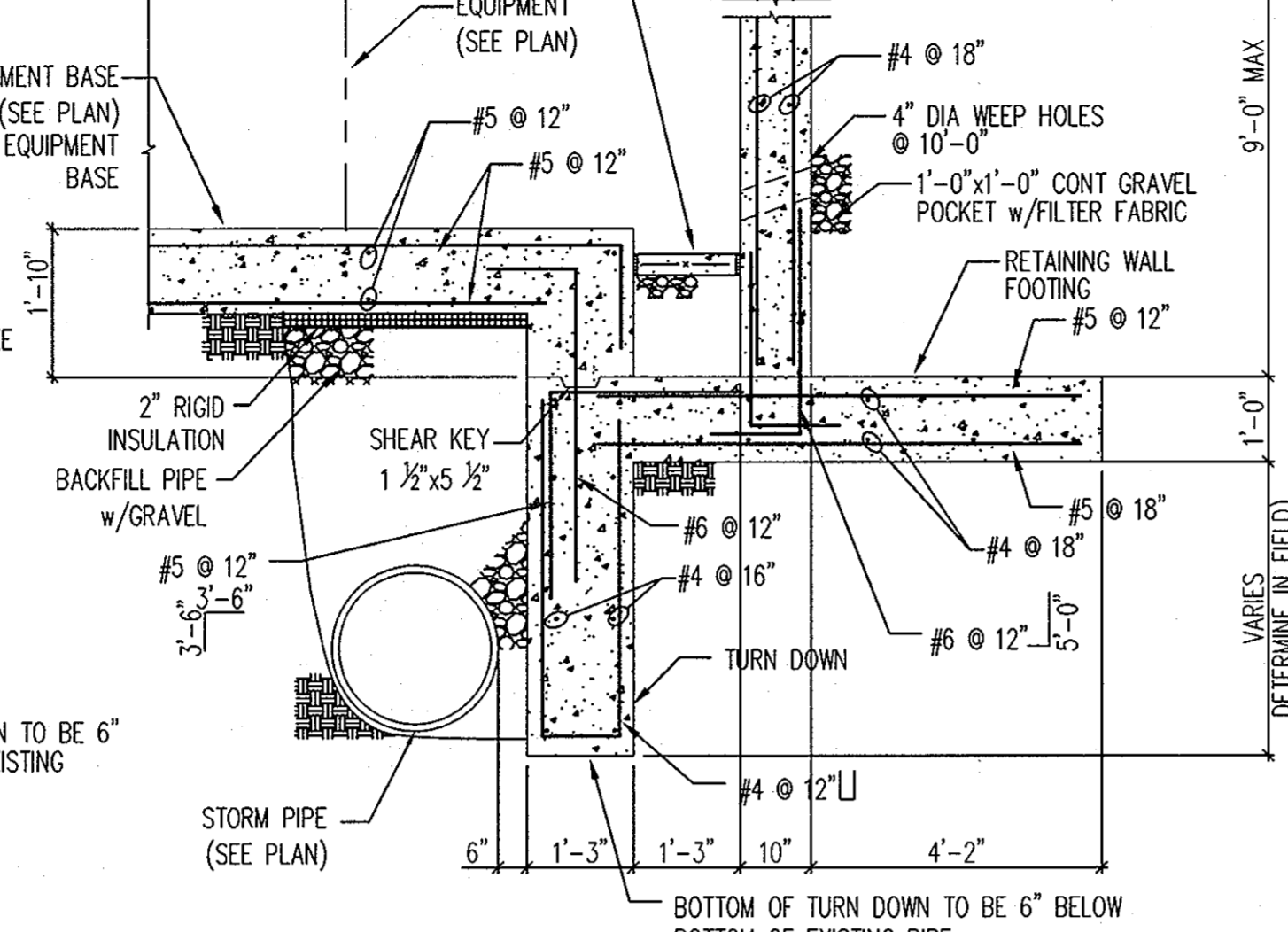
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 8/29/08

RETAINING WALL #9
 DETAILS

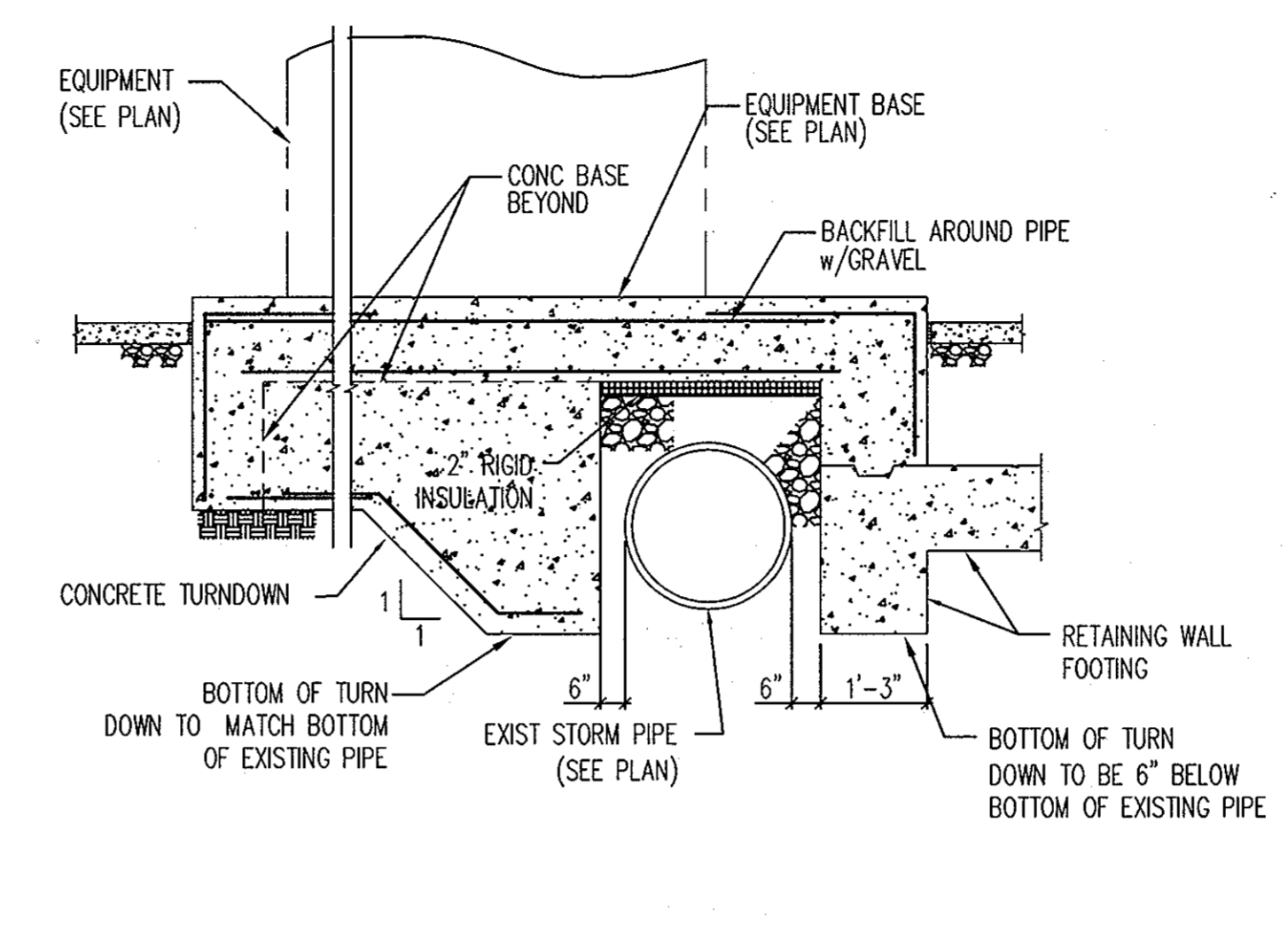
S-201A
 SHEET 77B OF 77



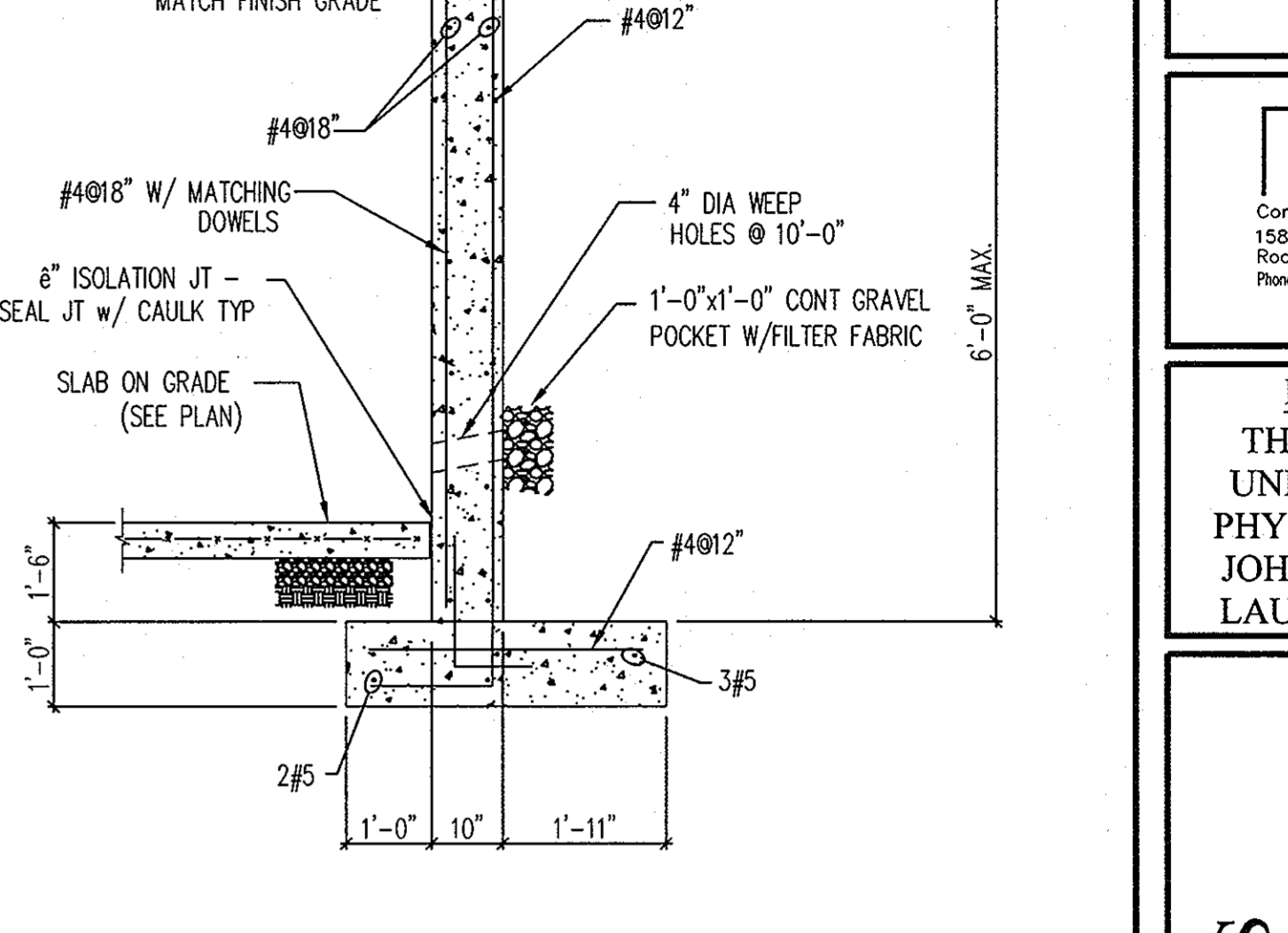
1 GENERATOR/WATER TANK BASE
 SCALE: 1/2"=1'-0"



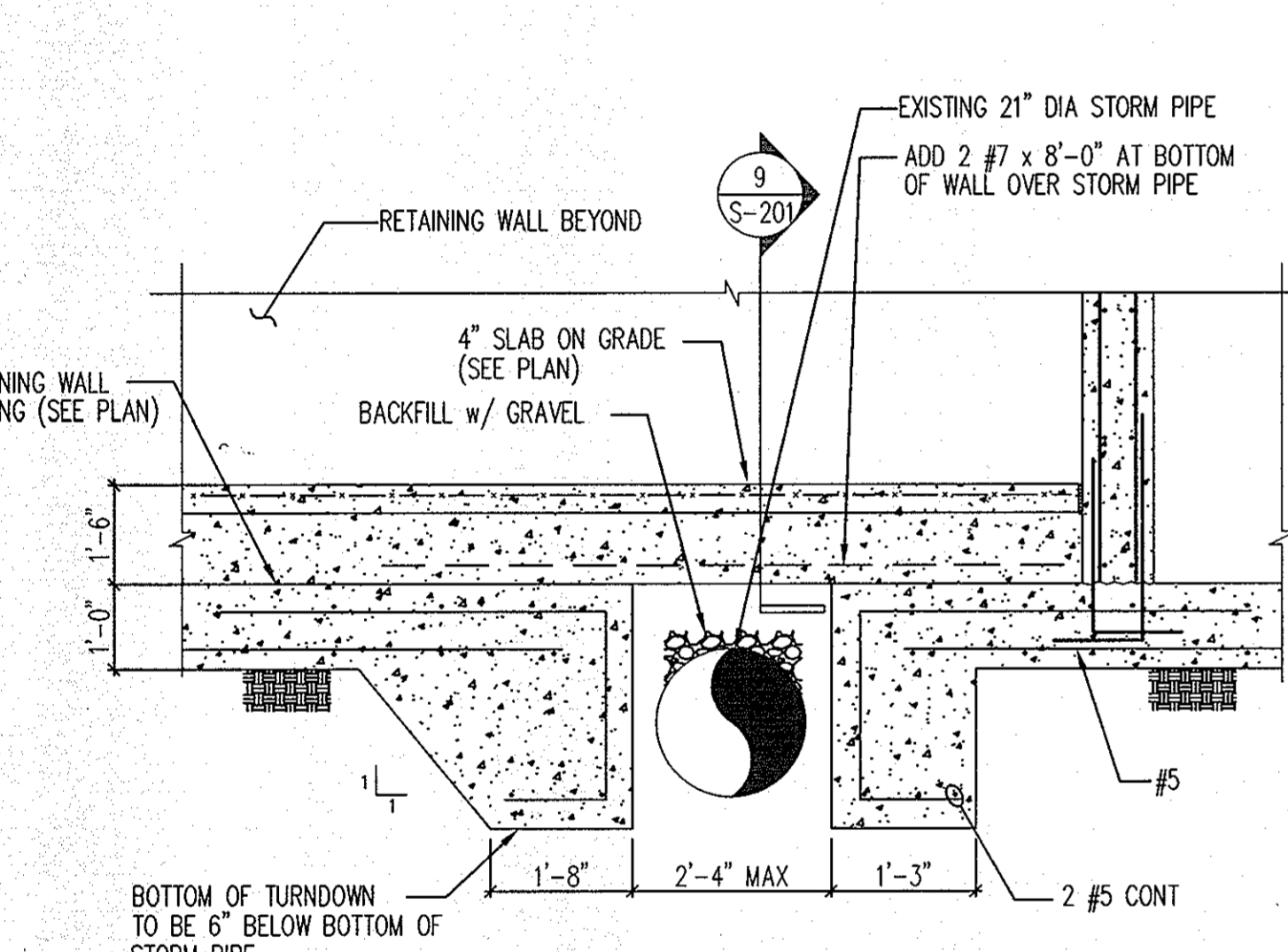
2 RETAINING WALL
 SCALE: 1/2"=1'-0"



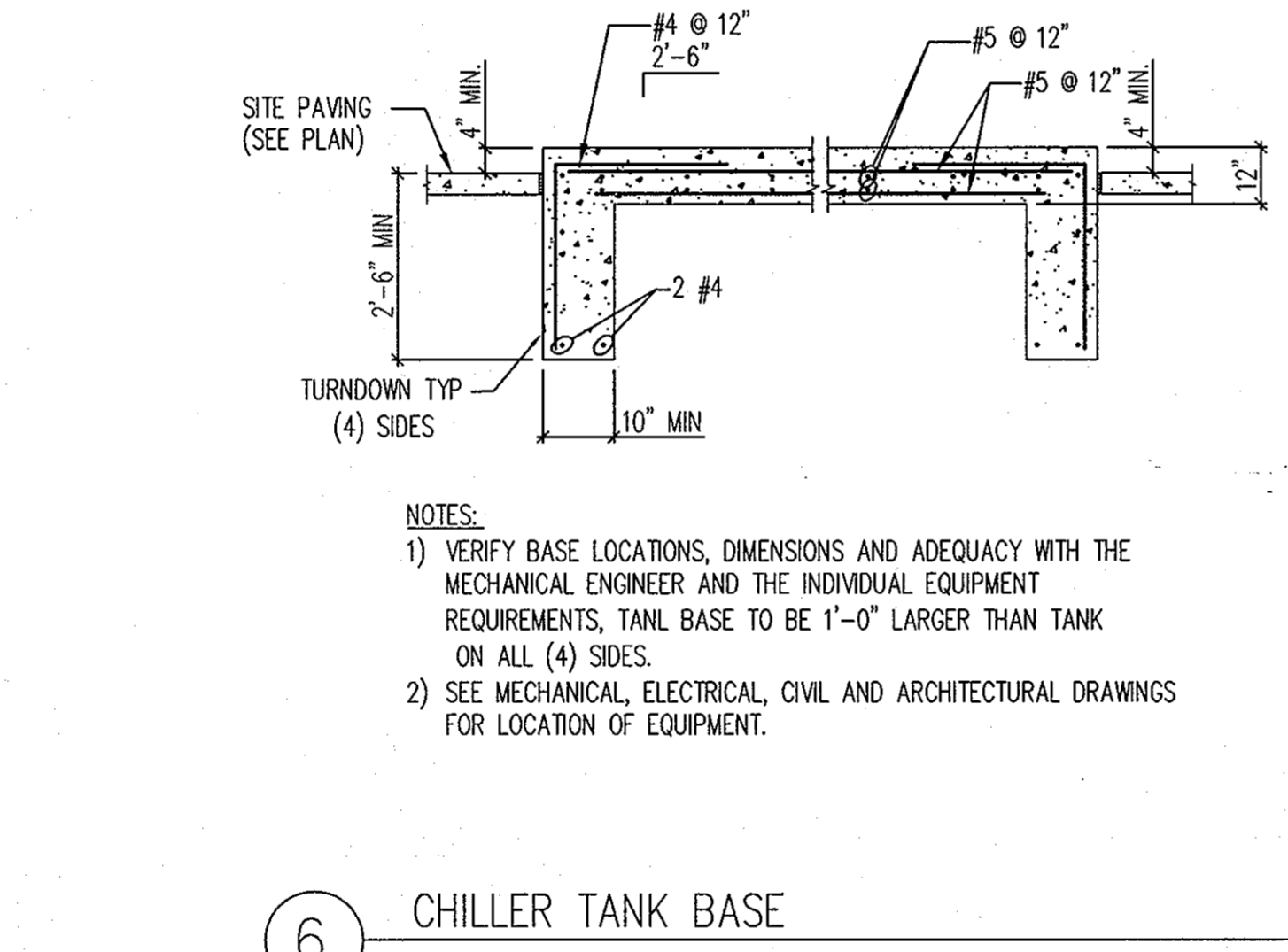
3 GENERATOR BASE @ END OF PAD
 SCALE: 1/2"=1'-0"



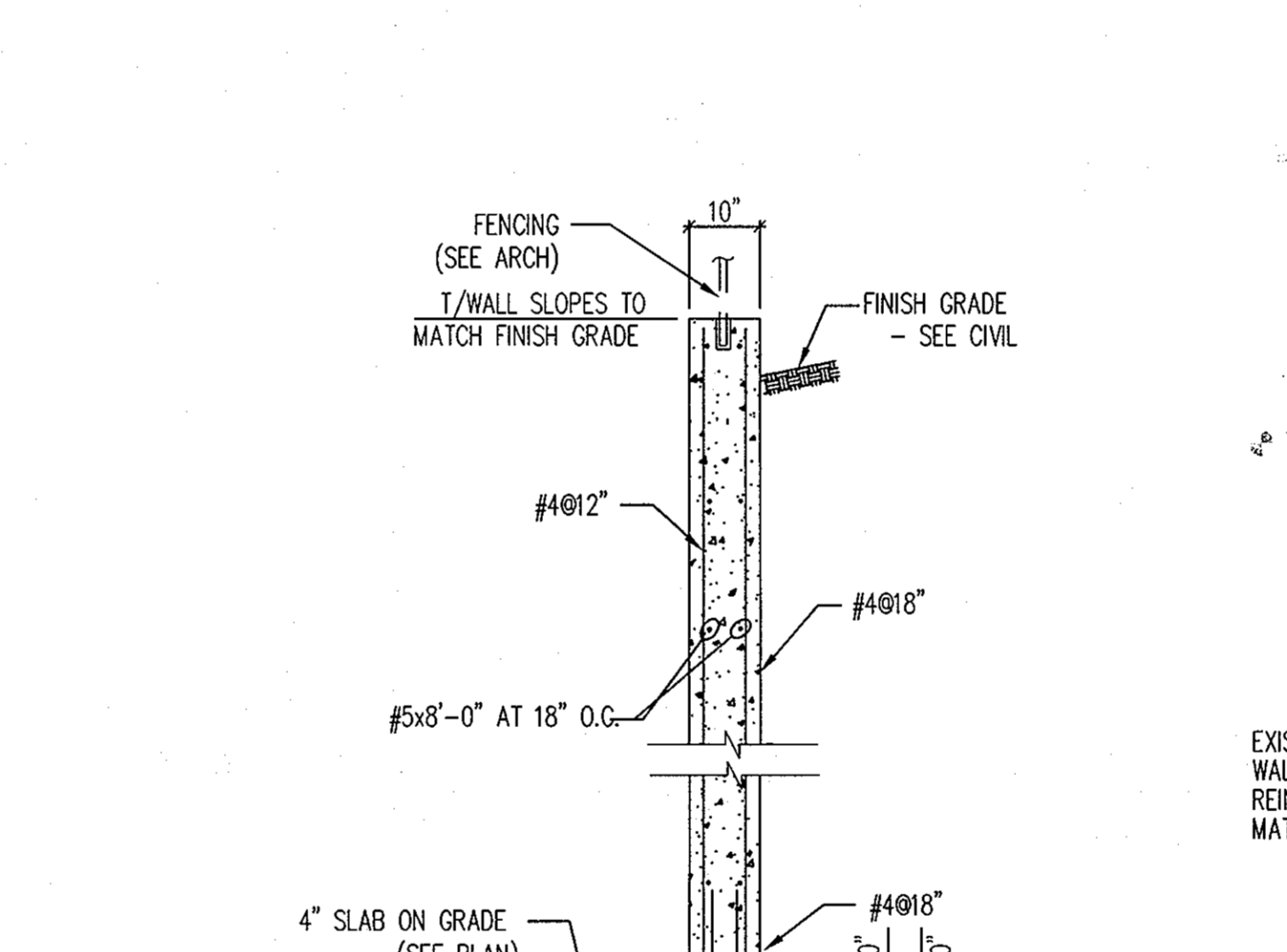
4 RETAINING WALL - SOUTH WALL
 SCALE: 1/2"=1'-0"



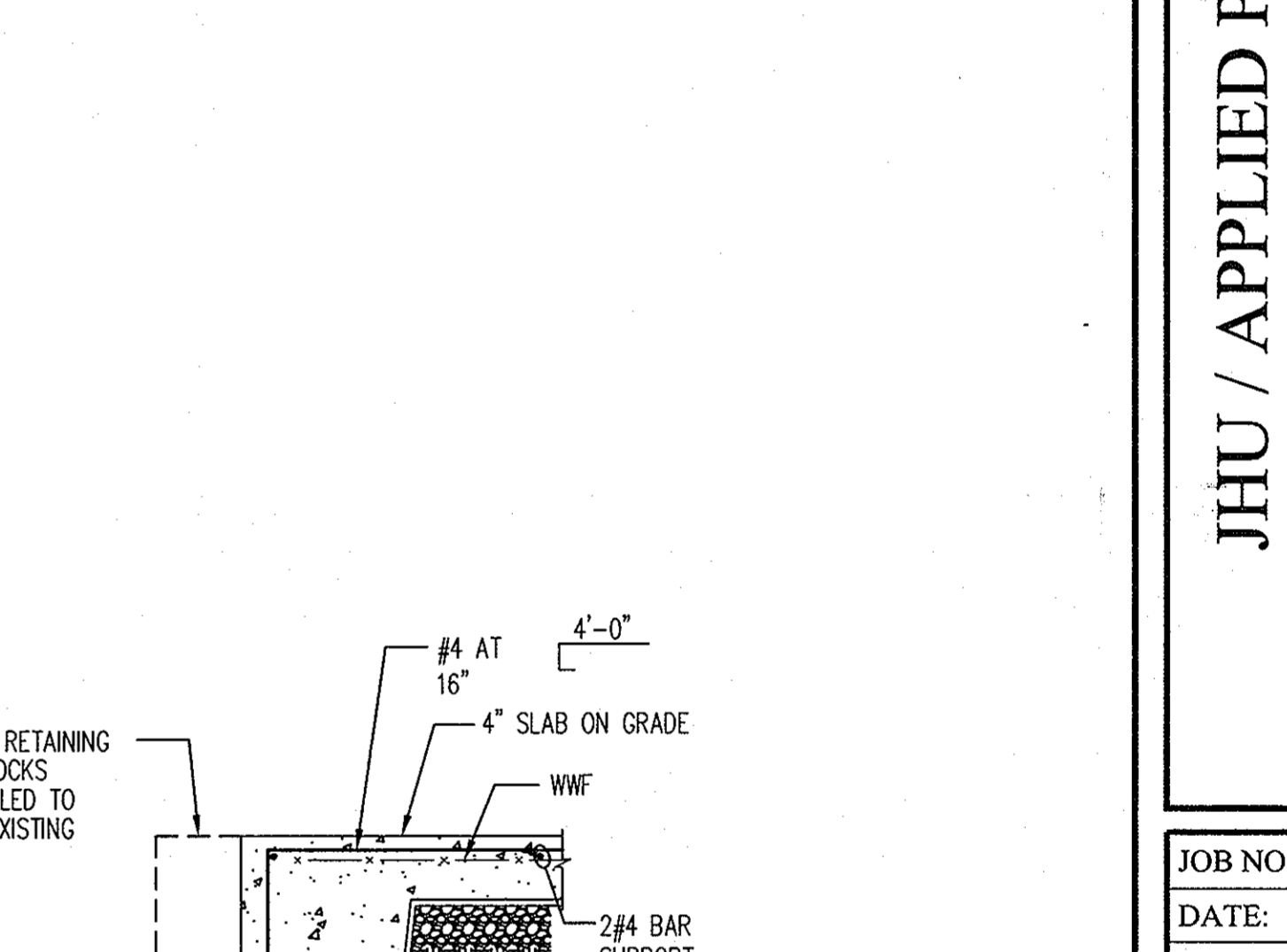
5 RETAINING WALL FOOTING AROUND STORM PIPE
 SCALE: 1/2"=1'-0"



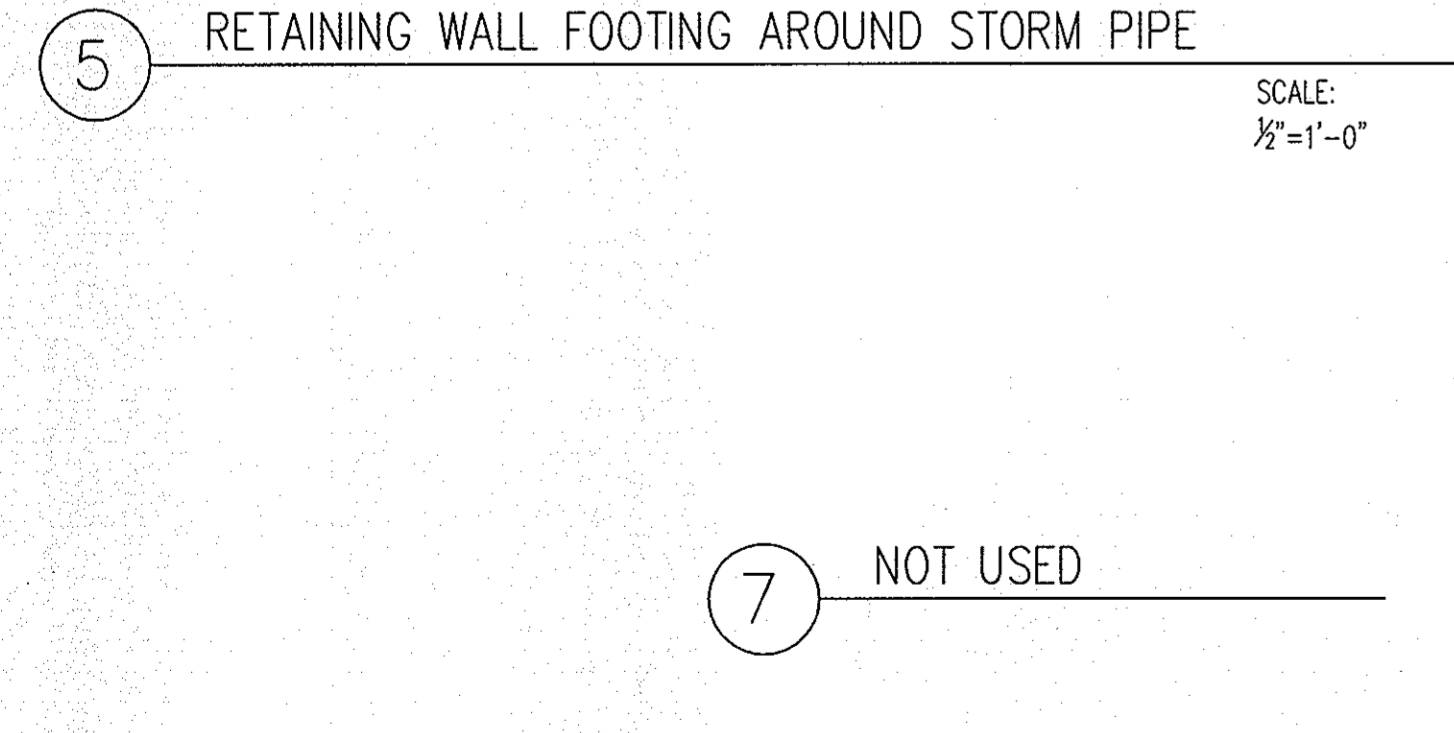
6 CHILLER TANK BASE
 SCALE: 1/2"=1'-0"



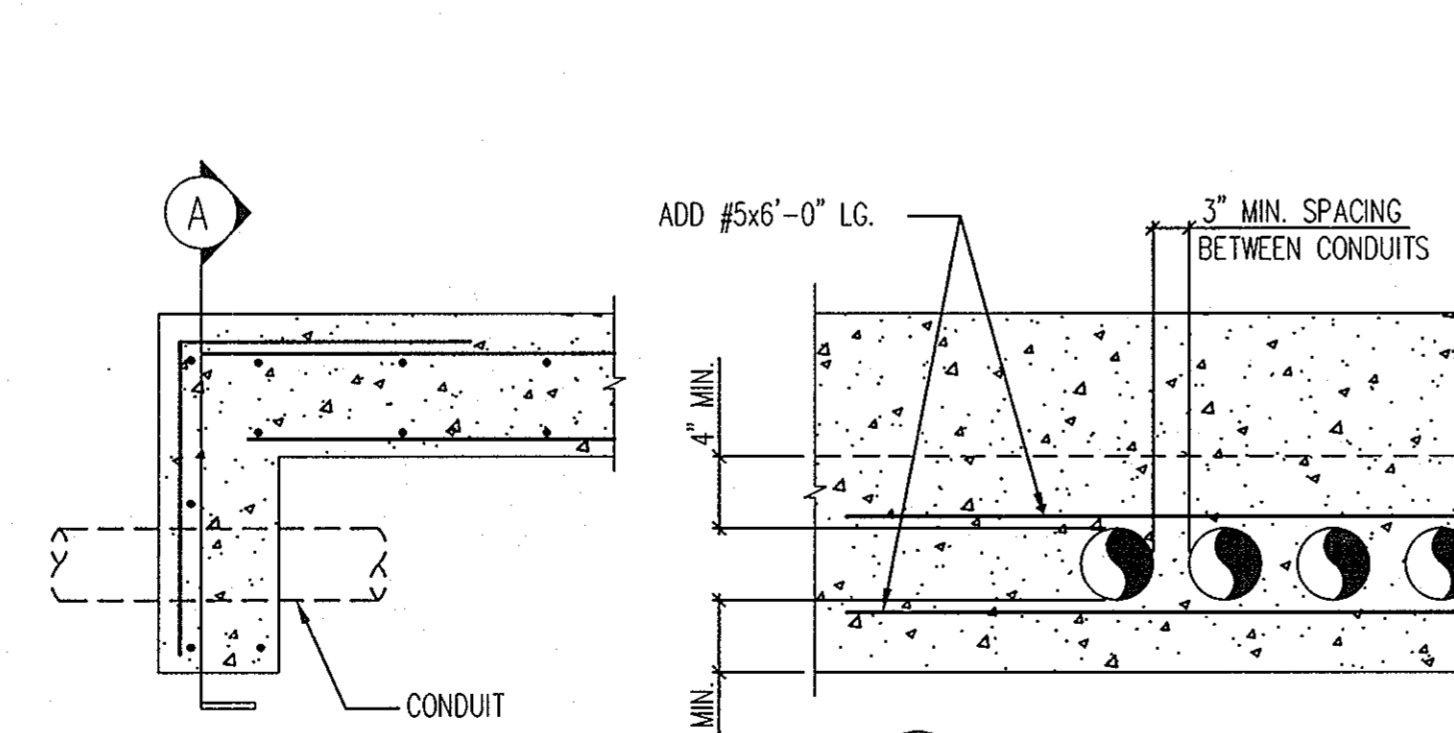
9 RETAINING WALL OVER STORM PIPE
 SCALE: 1/2"=1'-0"



10 SLAB TURN DOWN
 NTS



7 NOT USED



8 CONDUIT THROUGH EQUIPMENT BASE TURN DOWN
 SCALE: 3/4"=1'-0"

REVISION DATED 8-21-08 BY: RATHERBER/GOSS ASSOCIATES 15871 CROBBS BRANCH WAY ROCKVILLE, MD 20855

APPROVED: HOWARD COUNTY DEPARTMENT OF Planning & Zoning
[Signature] 10/1/08
 Director Date
[Signature] 10/2/08
 Chief, Division of Land Development JEH Date
[Signature] 10/2/08
 Chief, Development Engineering Division CE Date

SDP-05-050