

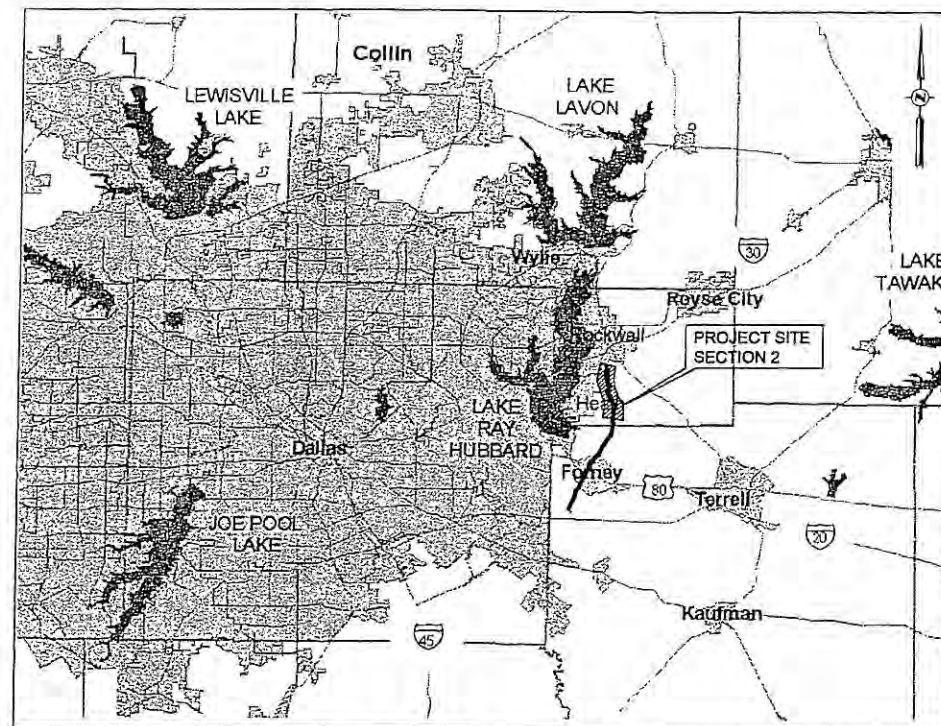
NORTH TEXAS MUNICIPAL WATER DISTRICT

CONSTRUCTION PLANS FOR ROCKWALL - HEATH TRANSFER SEWER

RHCF 01-1

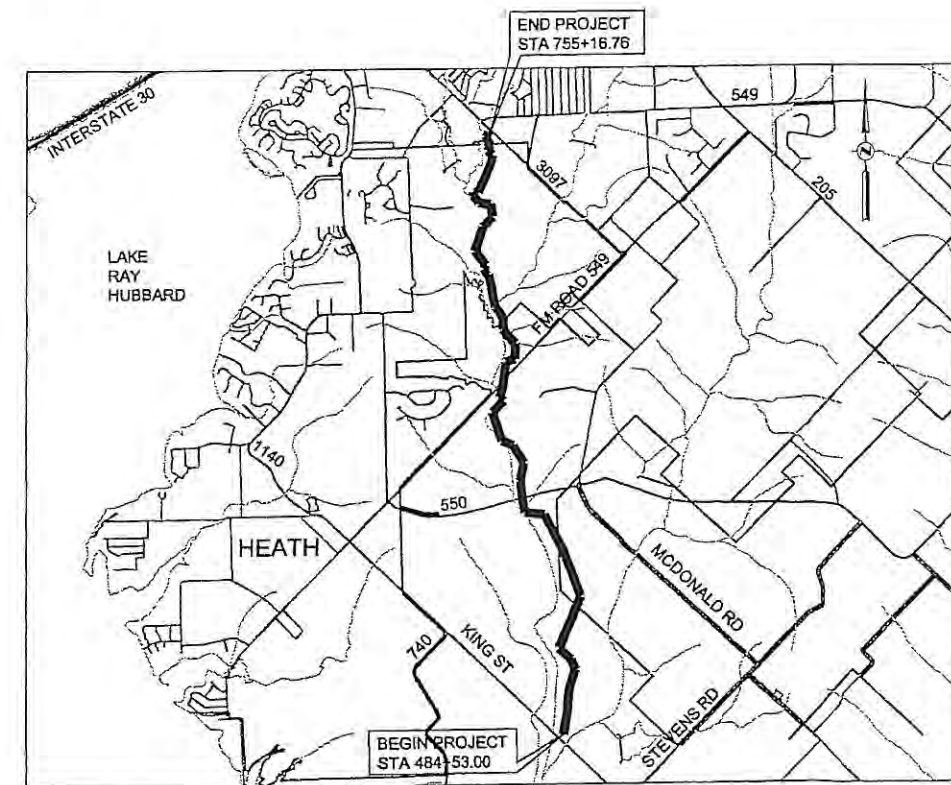
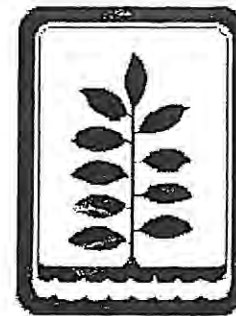
SECTION 2

STA 484+37.93 TO STA 755+16.76



PROJECT VICINITY MAP

NTS



PROJECT LOCATION MAP

NTS

DECEMBER 8, 2003

KELLOGG BROWN & ROOT, INC.

KBR

Engineered by KBR Technical Services, Inc.



ISSUED FOR BIDS

DRAWING INDEX

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1	TITLE SHEET
2	DRAWING INDEX AND GENERAL NOTES
3	PLAN AND PROFILE, STA 483+00 TO STA 494+00
4	PLAN AND PROFILE, STA 494+00 TO STA 505+00
5	PLAN AND PROFILE, STA 505+00 TO STA 516+00
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10	PLAN AND PROFILE, STA 560+00 TO STA 571+00
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17	PLAN AND PROFILE, STA 637+00 TO STA 648+00
18	PLAN AND PROFILE, STA 648+00 TO STA 659+00
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DRAWING LEGEND

SYMBOL	LINE DESCRIPTION
---	PROPERTY LINE
---	EXISTING EASEMENT LINE
---	PROPOSED EASEMENT LINE
---	CENTERLINE
---	PROPOSED SANITARY SEWER LINE
---	EXISTING FENCE
● PP	EXISTING POWER POLE
● LP	EXISTING LIGHT POLE
△ 3030	SURVEY CONTROL POINT
● 2114 IR	IRON ROD

GENERAL PROJECT NOTES

- COORDINATION WITH ADJACENT CONTRACTORS WILL BE REQUIRED WHERE APPLICABLE AT THE INTERFACES OF CONTRACTS.
- THE CONTRACTOR'S ACTIVITIES ALONG THE PIPELINE ROUTE SHALL BE LIMITED TO THE CONSTRUCTION LIMITS SHOWN ON THE DRAWINGS OR MADE AVAILABLE TO CONTRACTOR BY OWNER. NOTHING CONTAINED IN THE SPECIFICATIONS AND NOTHING MARKED ON THE DRAWINGS SHALL BE INTERPRETED AS GIVING THE CONTRACTOR EXCLUSIVE OCCUPANCY WITHIN THE TERRITORY SHOWN. ALL DAMAGES RESULTING FROM CONTRACTOR'S USE OF PROPERTY SHALL BE PAID FOR BY THE CONTRACTOR.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE FOR ADDITIONAL AREAS THAT HE MAY REQUIRE FOR HIS OPERATION INCLUDING ACCESS ROADS TO WORK AREAS OR TO LINK UP WITH ANY ROAD WITHIN THE LIMITS OF OPERATIONS, AND CONTRACTOR SHALL BEAR ALL COSTS, LIABILITIES AND RESPONSIBILITIES IN CONNECTION THEREWITH.
- CONTRACTOR SHALL NOTIFY THE APPROPRIATE GOVERNMENTAL OR PRIVATE AGENCY BEFORE CONSTRUCTION BEGINS FOR CROSSING OR INTERFERING IN ANY WAY WITH DITCHES, RAILROAD TRACKS, ROADS, PIPELINE OR UTILITY LINES, UTILITY RIGHTS-OF-WAY OR EASEMENTS, OR ANY OTHER EXISTING FACILITIES AND OBTAIN ALL REQUIRED PERMITS, AND MEET ALL REQUIREMENTS THEREWITH INCLUDING OBTAINMENT OF ALL REQUIRED BONDS, INSURANCE AND OTHER REQUIREMENTS FOR CROSSING OR UTILIZATION OF RIGHTS-OF-WAY.
- EXISTING UNDERGROUND PIPELINE AND UTILITIES
 - UNDERGROUND PIPELINES AND UTILITIES EXIST ON THIS PROJECT. THESE PIPELINES MAY CONTAIN HAZARDOUS, FLAMMABLE OR CORROSIVE PRODUCTS UNDER SIGNIFICANT PRESSURE. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN PERFORMING ANY ACTIVITIES IN THE VICINITY OF ANY PIPELINE.
 - THE LOCATION, SIZE AND OWNERSHIP OF KNOWN UNDERGROUND UTILITIES SHOWN IN THE PLANS IS APPROXIMATE AND BASED ON THE INFORMATION AVAILABLE TO THE ENGINEER DURING DESIGN OF THE PROJECT. CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING UTILITIES INCLUDING THOSE NOT SHOWN ON THE DRAWINGS SUFFICIENTLY IN ADVANCE OF THE CONSTRUCTION SO THAT IF IT IS NECESSARY TO CHANGE OR MOVE THE UTILITY, THE PROGRESS OF THE WORK WILL NOT BE DELAYED.
 - THE CONTRACTOR SHALL PROVIDE ALL NECESSARY AND PROPER SUPPORT TO PIPELINES OR UTILITIES AT CROSSINGS AND PROVIDE ALL NECESSARY MATERIALS, SUPPLIES, SUPERVISION AND EXERCISE PROPER SAFETY PRECAUTIONS WHILE EXCAVATING IN AREAS ADJACENT TO AND AROUND PIPELINE/UTILITY CROSSINGS.
- CONTRACTOR SHALL ADEQUATELY PROTECT EXISTING BUILDINGS, STRUCTURES AND OTHER PERMANENT FACILITIES WITHIN AND ADJACENT TO THE TEMPORARY CONSTRUCTION EASEMENT.
- CONTRACTOR SHALL DETERMINE EXISTING GRADES AND DIMENSIONS OF ROADS, DITCHES, CULVERTS, DRIVEWAYS, ETC. BEFORE THEIR REMOVAL FOR USE IN THEIR SUBSEQUENT RESTORATION.
- FENCING, ROADS, DRIVEWAYS, CULVERTS, DITCHES OR OTHER FACILITIES OR IMPROVEMENTS REMOVED OR DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED IN THEIR ORIGINAL LOCATION AND LEFT IN A CONDITION AS GOOD OR BETTER THAN THAT IN WHICH THEY WERE FOUND UNLESS OTHERWISE NOTED ON DRAWINGS OR DIRECTED BY THE ENGINEER.
- CONTRACTOR SHALL PROVIDE ALL TRENCH SAFETY AND EXCAVATION SUPPORT SYSTEMS AS REQUIRED BY TEXAS STATE LAW AND THE CONTRACT DOCUMENTS.
- NO EXCESS EXCAVATED MATERIAL SHALL BE DEPOSITED IN LOW AREAS OR ALONG NATURAL DRAINAGE WAY WITHOUT WRITTEN PERMISSION FROM THE OWNER'S REPRESENTATIVE. SHOULD THE CONTRACTOR PLACE EXCESS MATERIAL IN AREAS WITHOUT WRITTEN PERMISSION, HE WILL BE RESPONSIBLE FOR ALL DAMAGE RESULTING FROM SUCH FILL AND HE SHALL REMOVE THE MATERIAL AT HIS OWN COST IF THE DISTRICT SO DIRECTS.
- CONTRACTOR SHALL PROVIDE ALL WARNING LIGHTS, BARRICADES AND OTHER ITEMS REQUIRED FOR THE PROTECTION OF PERSONNEL AND THE PUBLIC.
- UNRESTRICTED INGRESS AND EGRESS OF OWNERS AND LEASEES OF PROPERTY ADJACENT TO THE CONSTRUCTION RIGHTS-OF-WAY SHALL BE MAINTAINED BY CONTRACTOR AT ALL TIMES DURING THE DURATION OF THE WORK. CONTRACTOR SHALL OBTAIN ANY REQUIRED PERMITS.
- ALL TOPSOIL SHALL BE STOCKPILED AND REPLACED TO A MINIMUM DEPTH OF 6 INCHES. THE REPLACED TOPSOIL SHALL BE DISC HARROWED AND SMOOTHED.
- STATIONING SHOWN IS MEASURED HORIZONTALLY ALONG THE CENTERLINE OF THE PIPELINE.
- PIPELINE ELEVATIONS GIVEN ARE PIPE INVERT ELEVATIONS UNLESS OTHERWISE NOTED.
- SURFACE WATER CONTROL
 - CONTRACTOR SHALL PROVIDE STORM WATER POLLUTION PREVENTION PLANS (SWPPP) AND ALL APPURTENANCES WHICH COMPLY WITH THE LATEST E.P.A. SWPPP REGULATIONS.
 - UNLESS OTHERWISE SHOWN ON THE PLANS, THE CONTRACTOR SHALL RESTORE GROUND TO ORIGINAL GRADE AND PREVENT PONDING OF STORM WATER RUNOFF ON ALL GROUND DISTURBED BY CONSTRUCTION ACTIVITIES.
 - CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE MEASURES FOR PREVENTING STORM WATER RUNOFF FROM ENTERING THE TRENCH DURING CONSTRUCTION.

16. SURFACE WATER CONTROL (CONTINUED)

- CONTRACTOR SHALL MAINTAIN DRAINAGE FOR ALL STORM DRAINAGE CULVERTS REMOVED OR IN AREAS OTHERWISE AFFECTED BY CONSTRUCTION OPERATIONS.
- CONTRACTOR SHALL MAINTAIN DRAINAGE WITHIN ALL COUNTY AND CITY RIGHTS-OF-WAYS AFFECTED BY CONSTRUCTION AND RESTORE THE RIGHTS-OF-WAYS BACK TO CONDITIONS EQUAL TO OR EXCEEDING THAT WHICH EXISTED PRIOR TO START OF CONSTRUCTION.

17. PROTECTION OF TREES

- ALTHOUGH 50 FEET OF PERMANENT EASEMENT AND 30 ADDITIONAL FEET OF TEMPORARY CONSTRUCTION EASEMENT ARE INDICATED, THE CONTRACTOR WILL NOT BE ALLOWED TO CLEAR THE ENTIRE 30 FOOT TEMPORARY CONSTRUCTION EASEMENT OF ALL EXISTING TREES OVER 4 INCHES CALIPER. THE CONTRACTOR AND OWNER'S REPRESENTATIVE WILL DETERMINE THE ONLY TREES THAT MAY BE REMOVED WITHIN THE CONST EASEMENTS PRIOR TO EXCAVATION OR CLEARING ACROSS ANY TRACTS. CONTRACTOR WILL BE HELD LIABLE FOR DAMAGE TO ANY TREES THAT HAVE NOT BEEN DESIGNATED FOR APPROVAL.
- CONTRACTOR MAY TRIM TREES AS NECESSARY UNDER OWNER SUPERVISION.
- ALL CUT LIMBS OVER 1 INCH CALIPER SHALL BE PAINTED WITH TREE WOUND PAINT IMMEDIATELY AFTER CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED IN THIS AREA.
- ALL TREES OVER 4 INCHES CALIPER THAT ARE REMOVED OR SEVERELY DAMAGED BY CONSTRUCTION OPERATIONS WITHOUT PERMISSION SHALL BE REPLACED WITH EQUIVALENT TYPE AND DIAMETER OF TREES AT THE SOLE EXPENSE OF THE CONTRACTOR OR THE CONTRACTOR SHALL PAY THE FAIR MARKET VALUE TO THE OWNER.
- THE CONTRACTOR SHALL TAKE SPECIAL CARE IN AVOIDING DAMAGE TO PLANT MATERIAL OR TREES WITHIN THE SITE OR PROPERTY ADJACENT TO THE WORK. ANY AND ALL PLANT MATERIAL OR TREES DAMAGED AS A RESULT OF THE CONTRACTOR'S WORK SHALL BE CORRECTED IN ACCORDANCE WITH TEXAS A&M FORMULA FOR SHADE TREE EVALUATION.

- FINISHED GROUND SHALL NOT CONTAIN ANY MORE ROCKS OR DEBRIS THAN THE SURROUNDING UNDISTURBED GROUND.
- ANY FENCES DAMAGED OR REMOVED BY CONSTRUCTION ACTIVITIES NOT NOTED ON PLANS SHALL BE REPLACED WITH A FENCE OF EQUAL OR SUPERIOR QUALITY AT CONTRACTOR'S EXPENSE.
- ANY CONCRETE PAVEMENT OR SIDEWALK, NOT SHOWN TO BE REMOVED IN THE PLANS, REMOVED BY THE CONTRACTOR SHALL BE REPLACED BY THE CONTRACTOR AT HIS SOLE EXPENSE.
- CONTRACTOR SHALL CONSTRUCT TEMPORARY ASPHALT RAMPS TO PROTECT CURBS AT THE CONCRETE PAVEMENT USED BY CONSTRUCTION TRAFFIC, AND SHALL REMOVE ASPHALT AT END OF PROJECT.
- TRAFFIC CONTROL
 - THE CONTRACTOR SHALL PROVIDE BARRICADES, FLAGMEN AND OTHER TRAFFIC CONTROL DEVICES AS REQUIRED BY THE RESPECTIVE CITY'S TRAFFIC CONTROL DEPARTMENT FOR ANY CITY STREET LANE CLOSURES AND AS REQUIRED BY THE TEXAS DEPARTMENT OF TRANSPORTATION FOR WORK WITHIN TXDOT RIGHT-OF-WAY.
 - ALL BARRICADES, WARNING SIGNS, LIGHTS, DEVICES, ECT., FOR THE GUIDANCE AND PROTECTION OF TRAFFIC AND PEDESTRIANS MUST CONFORM TO THE INSTALLATION SHOWN IN THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, PUBLISHED BY THE STATE DEPARTMENT OF HIGHWAY AND PUBLIC TRANSPORTATION.
- CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD BEFORE COMMENCING WORK. ANY DISCREPANCIES BETWEEN SITE CONDITIONS AND THAT SHOWN ON THE DRAWINGS SHALL BE REPORTED TO THE ENGINEER IN A TIMELY MANNER.
- CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING REQUIRED SECURITY TO PROTECT MATERIALS, EQUIPMENT, AND WORK COMPLETED OR IN PROGRESS.
- THE CONTRACTOR IS TO DETERMINE THE EXACT LOCATION OF BORE PITS IN THE FIELD. PROPOSED PIT LOCATIONS ARE SUBJECT TO REGULATORY AGENCY REQUIREMENTS AND/OR THE MINIMUM CONSTRAINTS DEPICTED BY THE TRAFFIC CONTROL PLANS. A SUBMITTAL SHOWING PIT LOCATIONS SHALL BE SUBMITTED TO AND APPROVED BY THE ENGINEER PRIOR TO COMMENCING WORK.
- WORK PITS FOR TUNNELING OPERATION SHALL BE BORDERED BY A SUBSTANTIAL SECURITY FENCE OR PROTECTED FROM THE PUBLIC BY OTHER SUITABLE MEANS WHEN NOT IN USE.

- THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS IN A MANNER SUCH THAT TRUCKS AND OTHER VEHICLES DO NOT CREATE A DIRT NUISANCE OR SAFETY HAZARD IN ANY STREETS OR ROADWAYS, PUBLIC OR PRIVATE. THE CONTRACTOR SHALL CLEAN AND SWEEP DIRT FROM ALL STREETS AND ROADWAYS ON A DAILY BASIS.
- CONTRACTOR SHALL COMPLY WITH OSHA REGULATIONS AND STATE OF TEXAS LAW CONCERNING EXCAVATION, TRENCHING AND SHORING.
- NO TRENCHES SHALL BE LEFT OPEN WHILE CONTRACTOR IS NOT WORKING. CONTRACTOR SHALL CONTAIN ALL WORK WITHIN THE EASEMENTS PROVIDED FOR THIS PROJECT AS SHOWN ON THE PLANS.
- THE CONTRACTOR MAY EMPLOY TWO OR MORE CONSTRUCTION CREWS ON THE PROJECT SIMULTANEOUSLY IN ORDER TO EXPEDITE COMPLETION.
- THE CONTRACTOR SHALL CONTINUOUSLY RESTORE THE CONSTRUCTION AREA TO ORIGINAL GRADE AND SECTION. AT NO TIME SHALL THERE BE MORE THAN 2000 L.F. ALONG THE EASEMENT THAT HAS NOT BEEN RESTORED.
- CONTRACTOR SHALL NOT PLACE FILL OR WASTE MATERIAL ON ANY PRIVATE PROPERTY WITHOUT PRIOR WRITTEN AGREEMENT WITH THE PROPERTY OWNER.
- BEFORE COMPLETION OF THIS PROPOSED WORK, ALL ROADWAYS, SLOPES, DITCHES AND BERMS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION.
- ELEVATION OF THE TOPS OF MANHOLES WILL BE 0.50 FEET ABOVE THE EXISTING GROUND SURFACE UNLESS IDENTIFIED ON THE PLANS AS BEING LOCATED BELOW EXISTING GROUND SURFACE.
- THE R.O.W. WIDTHS IN SOME LIMITED AREAS MAY NOT BE SUFFICIENT FOR THE CONTRACTOR'S PLANNED WORK. THE CONTRACTOR MAY ACQUIRE ADDITIONAL TEMPORARY CONSTRUCTION R.O.W. AT HIS EXPENSE OR MODIFY HIS CONSTRUCTION PROCEDURES AS REQUIRED TO STAY WITHIN THE R.O.W. PROVIDED.
- THE CONTRACTOR SHALL PROVIDE TO THE OWNER A VIDEO TAPE DOCUMENTING THE ON THE GROUND PRECONSTRUCTION CONDITION OF THE PROPOSED PIPE LINE CONSTRUCTION AREAS, INCLUDING BOTH THE PERMANENT AND TEMPORARY CONSTRUCTION EASEMENTS AND ROADWAY CROSSINGS, PRIOR TO THE START OF CONSTRUCTION.
- WHEN THE PROPOSED SEWER LINE CONSTRUCTION CROSSES UNDER AN EXISTING PIPE LINE, THE CONTRACTOR SHALL CONTINUE THE TYPE "H" EMBEDMENT OF THE NEW SEWER PIPE UPWARD AND AROUND THE EXISTING PIPE ALSO TO A LEVEL ONE FOOT ABOVE THE TOP OF THE EXISTING PIPE LINE.

PIPELINE MARKER

- PIPELINE MARKERS SHALL BE LOCATED ON BOTH SIDES OF ALL ROADS AND RAILROADS AT THE R.O.W. LINES OVER THE CENTER OF THE PIPELINE. SEE DETAIL ON SHEET 16.

GROUNDWATER CONTROL

- IF CONTRACTOR ENCOUNTERS GROUNDWATER ON THE PROJECT, HE SHALL PROVIDE ADEQUATE MEASURES FOR DEWATERING THE TRENCH. ALL COST FOR PUMPS AND/OR OTHER RELATED APPURTENANCES SHALL BE INCLUDED IN THE APPROPRIATE ITEM OF THE BID SCHEDULE.
- PLACEMENT OF DEWATERING SYSTEM (HEADERS, WELLS, ETC.) WHERE APPLICABLE SHALL BE SUCH THAT PEDESTRIAN AND VEHICULAR TRAFFIC ARE NOT ADVERSELY IMPACTED.
- WATER DISCHARGED FROM THE DEWATERING SYSTEM SHALL NOT BE ALLOWED TO CREATE A WATER NUISANCE ON THE PROPERTY OR ADJACENT PROPERTY.

GEOTECHNICAL BORINGS

- A GEOTECHNICAL INVESTIGATION REPORT SHOWING THE LOCATION AND LOGS OF BORINGS TAKEN AT THE RAILROAD CROSSING, HWY 80 CROSSING, FM 740 CROSSING, KING ROAD CROSSING, FM 550 CROSSING AND FM 549 CROSSING IS ATTACHED TO THE BACK OF THE SPECIFICATIONS.

NORTH TEXAS MUNICIPAL
WATER DISTRICTROCKWALL-HEATH
TRANSFER SEWER
RHCF 01-1, SECTION 2SANITARY SEWER
PLAN AND PROFILE
DRAWING INDEX AND GENERAL NOTES

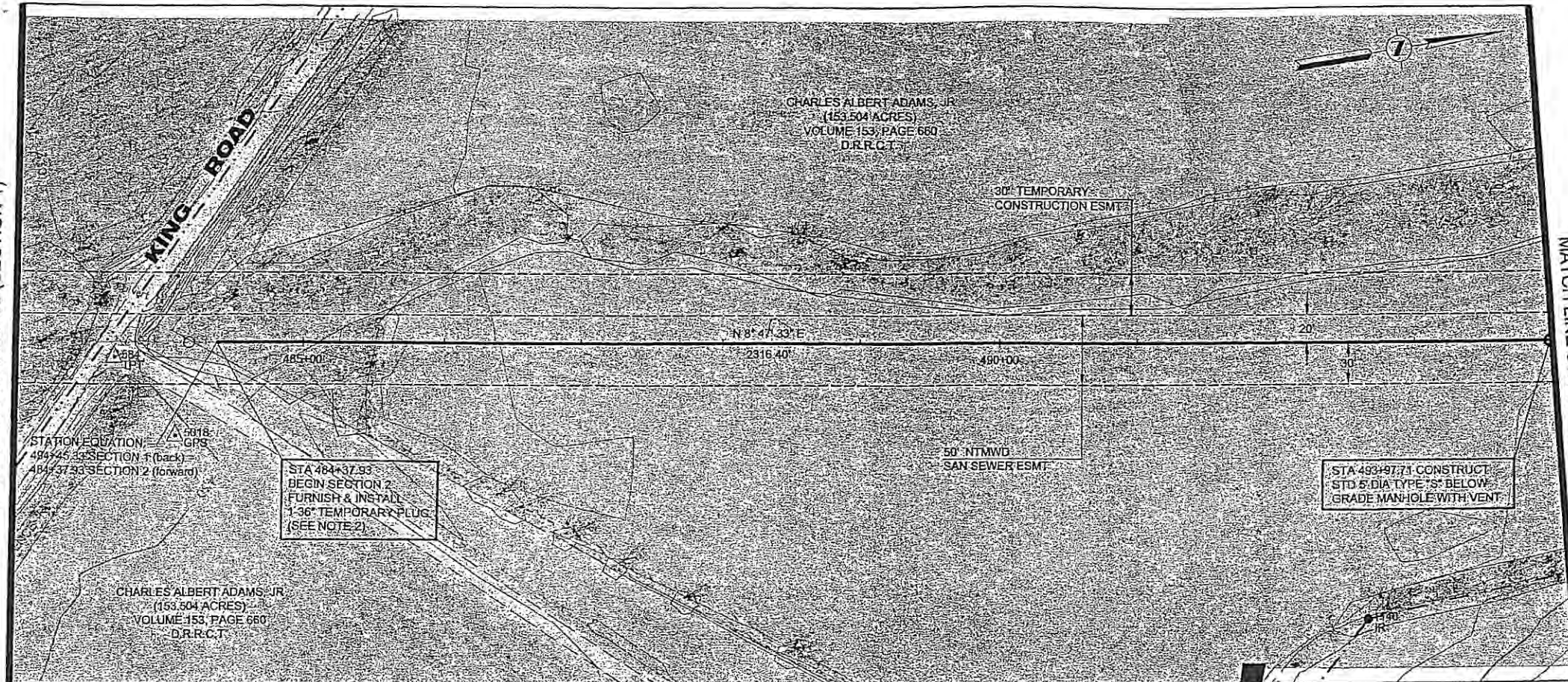
KBR

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Engineered by KBR Technical Services, Inc.

A	11/4/03	Added notes 36 and 37	THG	THG
A	11/4/03	Revised notes 25 and 26	THG	THG
A	11/4/03	Added sheet 35 to Drawing Index	THG	THG
A	11/11/03	Added note on Pipeline Marker	THG	THG
NO	DATE	REVISIONS	MADE/CKD	JOB NO.

DESIGNED	KBR	HORIZ. SCALE	NO SCALE
DRAWN	KBR	VERT. SCALE	NO SCALE
CHECKED	THG	DATE	SEPTEMBER 26, 2003
		CM-0148	DWG. NO. 2 OF 36

MATCH LINE STA 493+00 (SECTION 1)



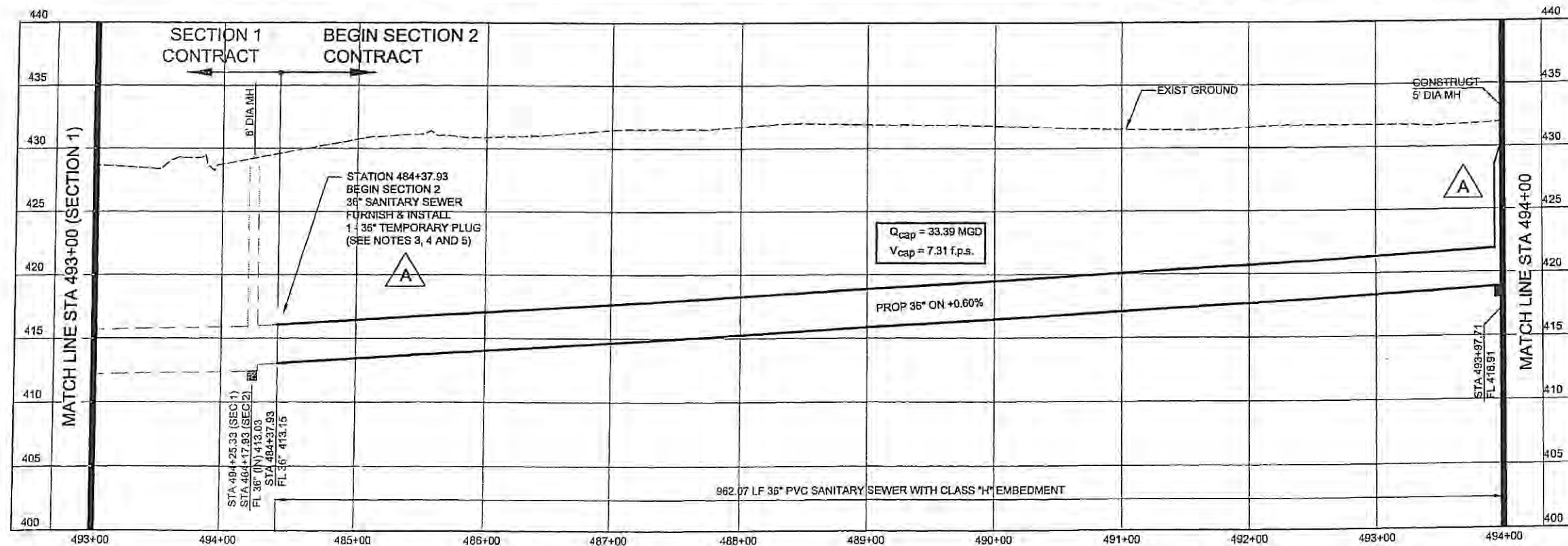
MATCH LINE STA 494+00

HORIZONTAL CONTROL DATA			
COORDINATES			
MH STATION	NORTH	EAST	DELTA
BEGIN SEC 2			
484+37.93	6986844.92	2598317.70	-
493+97.71	6987793.42	2598464.40	4' 14" 18" LT

SURVEY CONTROL			
COORDINATES			
POINT NO	NORTH	EAST	ELEVATION
584	6986769.70	2598316.76	429.36
1140 (IR)	6987632.57	2598641.52	432.50
5018	6986805.85	2598379.30	429.84

NOTES:

- SEE SHEET NO. 2 FOR GENERAL PROJECT NOTES.
- FLOW LINE AT BUFFALO CREEK SHOWN FOR REFERENCE ONLY.
- IF 36" SANITARY SEWER IN SECTION 1 CONTRACT IS ALREADY INSTALLED WHEN SECTION 2 CONSTRUCTION BEGINS, THEN REMOVE AND DISPOSE OF THE TEMPORARY PLUG INSTALLED UNDER SECTION 1 CONTRACT AND CONNECT SECTION 2 PIPE TO THE EXISTING 36" SANITARY SEWER.
- IF 36" SANITARY SEWER IN SECTION 1 CONTRACT IS NOT ALREADY INSTALLED WHEN SECTION 2 CONSTRUCTION BEGINS, THEN INSTALL A 36" TEMPORARY PLUG AT THE BEGINNING OF THE SECTION 2 SANITARY SEWER.
- CONTRACTOR SHALL COORDINATE WITH SECTION 1 CONTRACTOR TO ENSURE SAME PIPE SIZE, TYPE, AND MATERIAL IS USED TO CONNECT SECTION 2 TO SECTION 1 AT MANHOLE AT STA. 494+25.33 (SEC 1).
- RIM ELEVATION OF MANHOLES SHOWN ON THIS SHEET TO BE CONSTRUCTED IN THIS CONTRACT SHALL BE 24" BELOW FINISHED GRADE OF GROUND SURFACE.



MATCH LINE STA 494+00

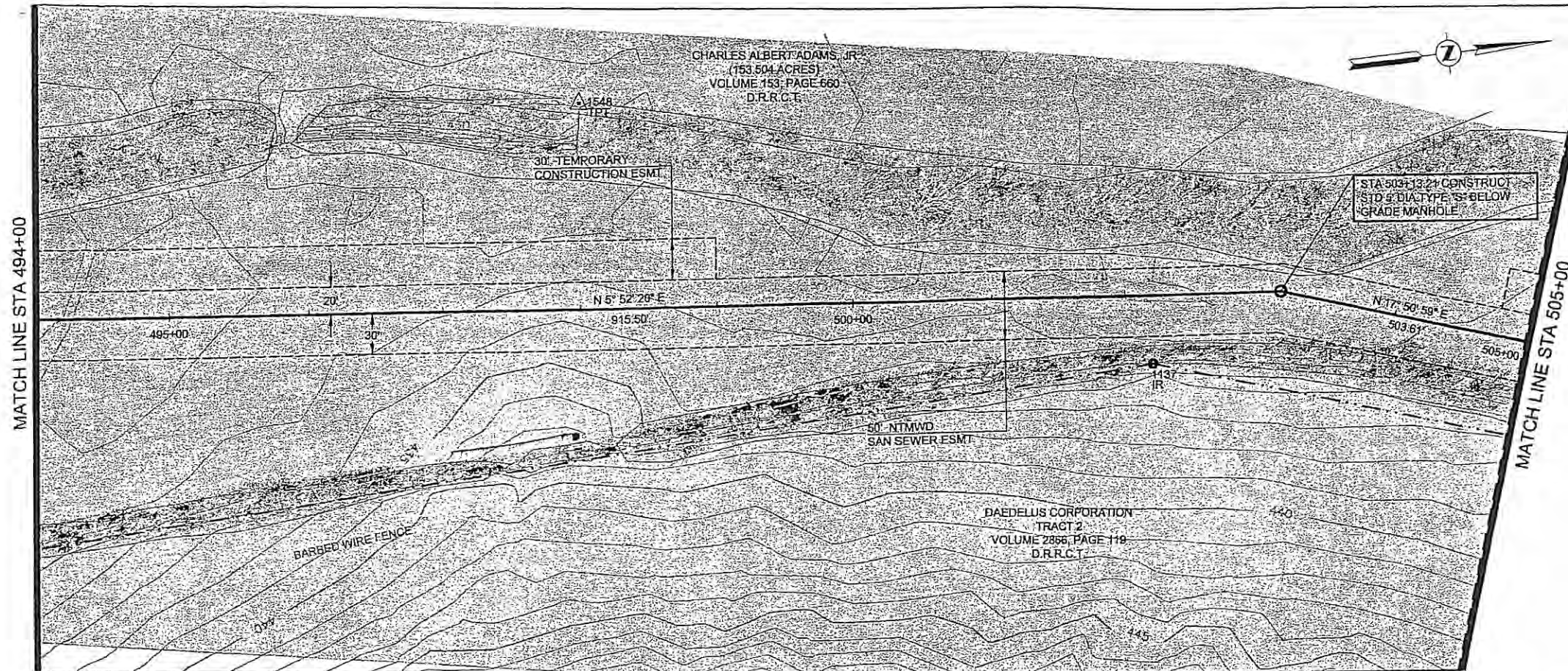
 NORTH TEXAS MUNICIPAL
WATER DISTRICT
ROCKWALL-HEATH
TRANSFER SEWER
RHC# 01-1, SECTION 2
SANITARY SEWER
PLAN AND PROFILE
BEGIN PROJECT TO 494+00

KBR
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NO	DATE	REVISIONS	MADE/CKD
A	11/5/03	Revised Horizontal Control Data	THG THG
A	11/5/03	Fixed profile to show MH at Sta. 493+97.71	THG THG
A	11/5/03	Added notes 5 and 6.	THG THG
A	11/5/03	Modified note in profile re: Sta 484+37.93	THG THG

DESIGNED	KBR	HORIZ. SCALE	1"=50'
DRAWN	KBR	VERT. SCALE	1"=5'
CHECKED	THG	DATE	SEPTEMBER 26, 2003
JOB NO.	CM-0148	DWG. NO.	3 OF 36

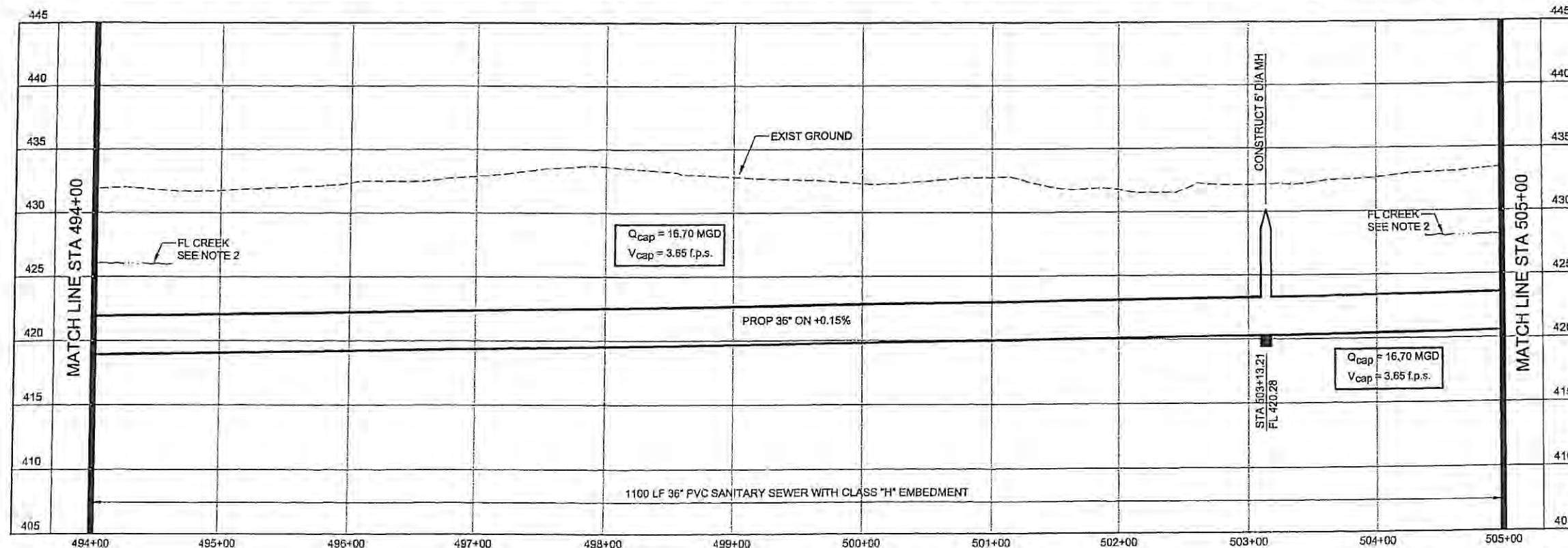


HORIZONTAL CONTROL DATA			
COORDINATES			
MH STATION	NORTH	EAST	DELTA
503+13.21	6988706.03	2598537.10	13° 17' 44" RT

SURVEY CONTROL			
COORDINATES			
POINT NO	NORTH	EAST	ELEVATION
1137 (IR)	6988609.28	2598579.49	435.04
1548	6988206.58	2598347.41	431.60

NOTES:

- SEE SHEET NO. 2 FOR GENERAL PROJECT NOTES.
- FLOW LINE AT BUFFALO CREEK SHOWN FOR REFERENCE ONLY.
- RIM ELEVATION OF MANHOLES SHOWN ON THIS SHEET TO BE CONSTRUCTED 24" BELOW FINISHED GRADE OF GROUND SURFACE.



**NORTH TEXAS MUNICIPAL
WATER DISTRICT**
**ROCKWALL-HEATH
TRANSFER SEWER
RHCF 01-1, SECTION 2**
**SANITARY SEWER
PLAN AND PROFILE
494+00 TO 505+00**

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DESIGNED	KBR	HORIZ. SCALE	1"=50'
DRAWN	KBR	VERT. SCALE	1"=5'
CHECKED	THG	DATE	SEPTEMBER 26, 2003
NO.	DATE	REVISIONS	MADE/CKD

JOB NO. **CM-0148**
 DWG. NO. **4 OF 36**

HORIZONTAL CONTROL DATA			
COORDINATES			
MH STATION	NORTH	EAST	DELTA
508+16.82	6989185.39	2598691.46	23° 34' 41" RT
509+16.82	6989260.37	2598757.63	23° 34' 41" LT
509+69.30	6989310.33	2598773.72	42° 05' 43" LT
513+84.05	6989688.49	2598603.40	21° 04' 22" LT

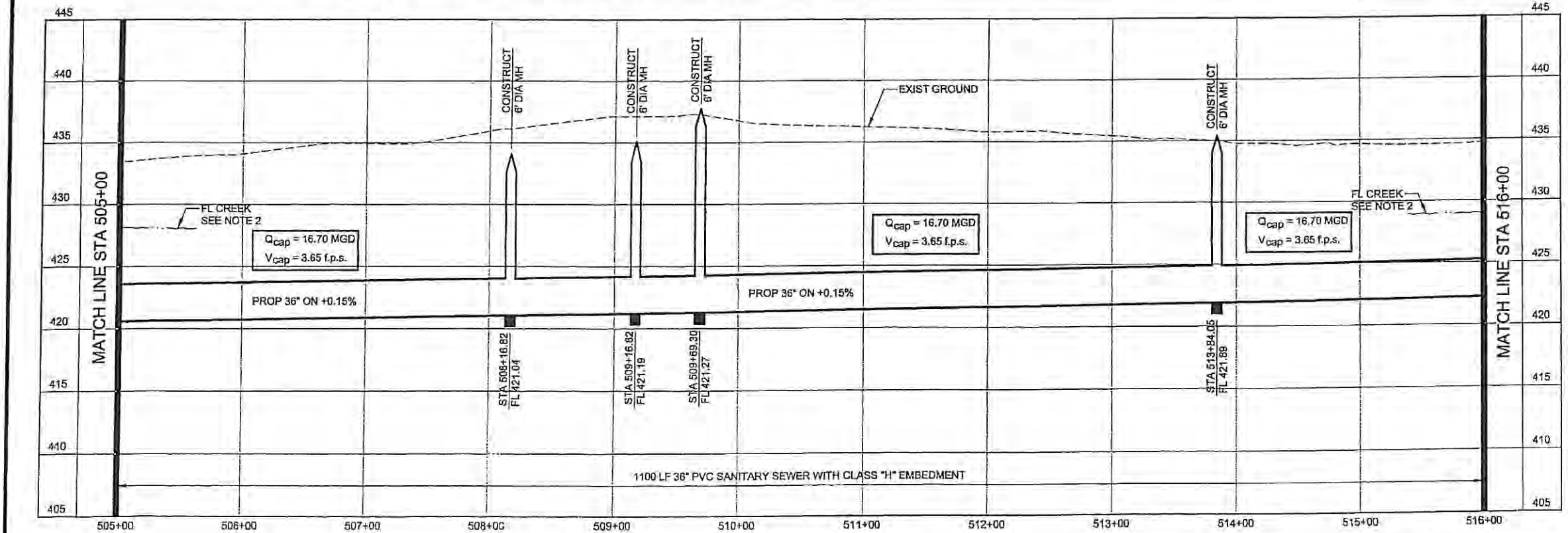
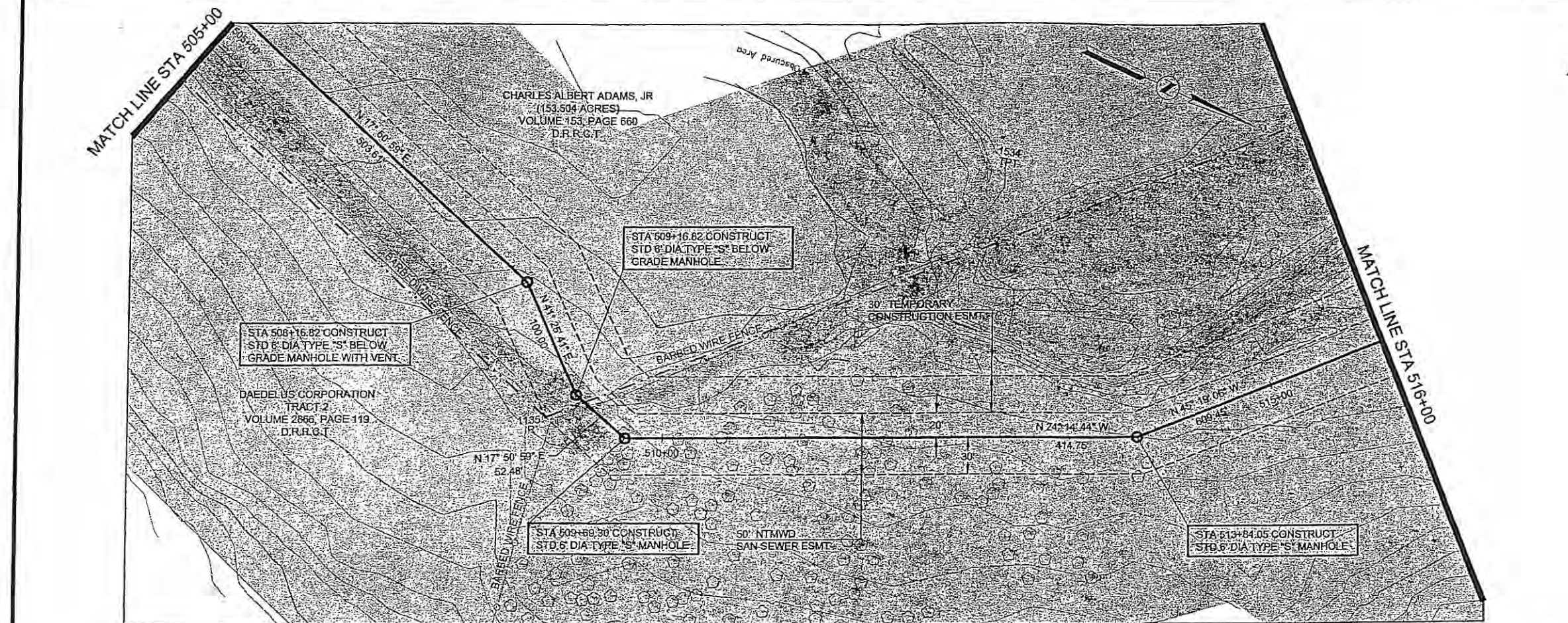
SURVEY CONTROL			
COORDINATES			
POINT NO	NORTH	EAST	ELEVATION
1135 (IR)	6989245.20	2598784.23	437.11
1534	6989487.76	2598429.20	434.65

- NOTES:**
- SEE SHEET NO. 2 FOR GENERAL PROJECT NOTES.
 - FLOW LINE AT BUFFALO CREEK SHOWN FOR REFERENCE ONLY.
 - RIM ELEVATION OF MANHOLES AT STATIONS 508+16.82 AND 509+16.82 TO BE CONSTRUCTED 24" BELOW FINISHED GRADE OF GROUND SURFACE.

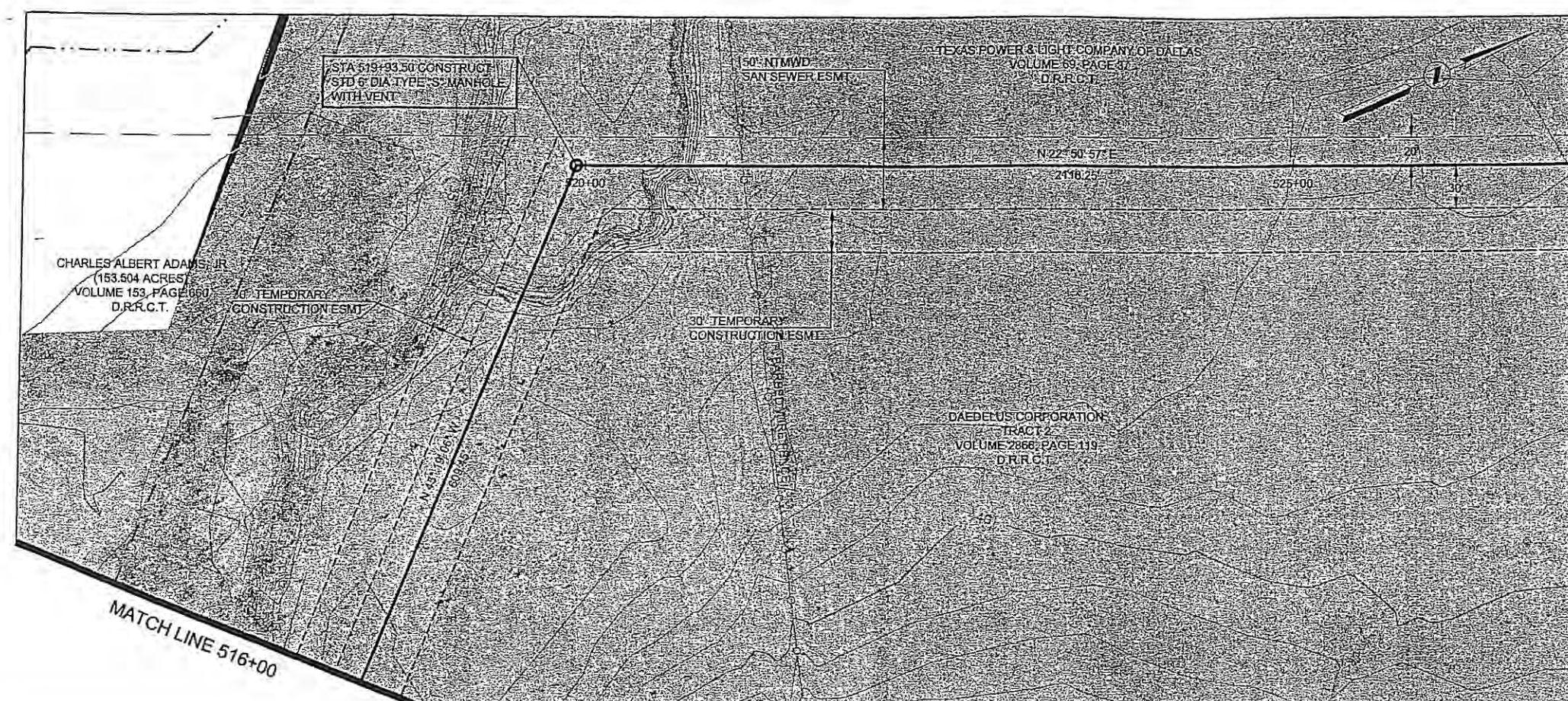
NORTH TEXAS MUNICIPAL WATER DISTRICT
ROCKWALL-HEATH TRANSFER SEWER
RHCF 01-1, SECTION 2
SANITARY SEWER PLAN AND PROFILE
505+00 TO 516+00

KBR
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 Engineers by KBR Technical Services, Inc.

DESIGNED	KBR	HORIZ. SCALE	1"=50'
DRAWN	KBR	VERT. SCALE	1"=5'
CHECKED	THG	DATE	SEPTEMBER 26, 2003
JOB NO.	CM-0148	DWG. NO.	5 OF 36



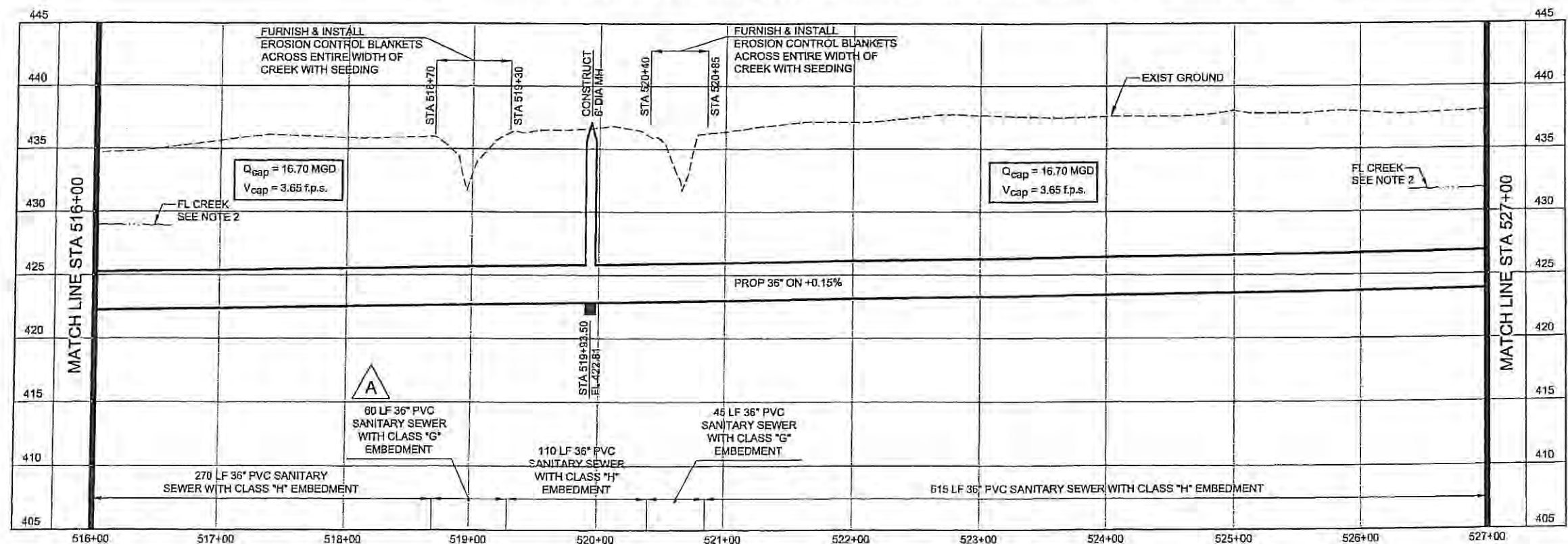
A	11/5/03	Revised Horizontal Control Data.	THG	THG
	11/5/03	Added note 3.	THG	THG
NO	DATE	REVISIONS	MADE	CHKD



HORIZONTAL CONTROL DATA			
COORDINATES			
MH STATION	NORTH	EAST	DELTA
519+93.50	6990117.04	2598170.07	68° 10' 03" RT

SURVEY CONTROL			
COORDINATES			
POINT NO	NORTH	EAST	ELEVATION
NONE			

- NOTES:**
- SEE SHEET NO. 2 FOR GENERAL PROJECT NOTES.
 - FLOW LINE AT BUFFALO CREEK SHOWN FOR REFERENCE ONLY.

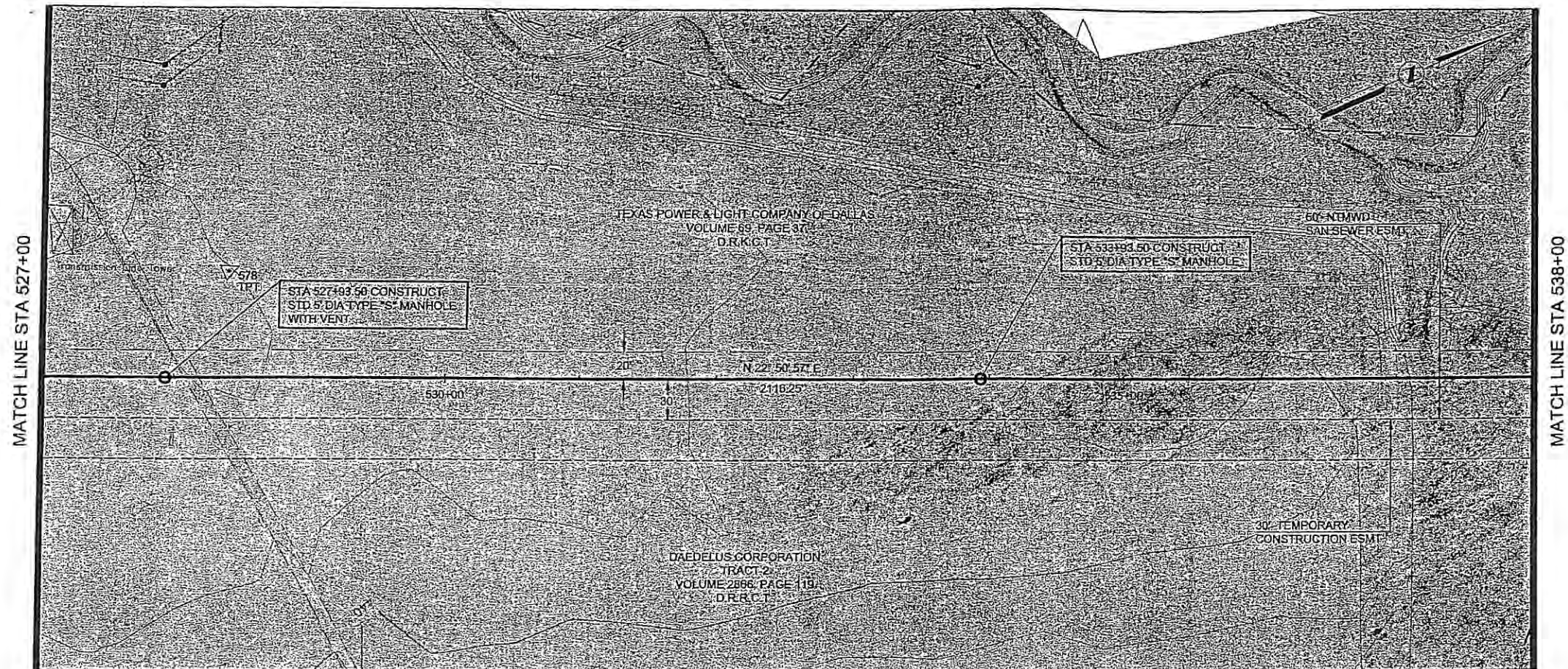


NORTH TEXAS MUNICIPAL WATER DISTRICT
ROCKWALL-HEATH TRANSFER SEWER
RHCF 01-1, SECTION 2
SANITARY SEWER PLAN AND PROFILE
516+00 TO 527+00



NO	DATE	REVISIONS	MADE (CKD)	JOB NO.
A	11/8/03	Revised length of pipe dimension in profile from 130' to 69'.	THG	THG

KBR			
Kellogg Brown & Root, Inc. Engineered by KBR Technical Services, Inc.			
DESIGNED	KBR	HORIZ. SCALE	1"=50'
DRAWN	KBR	VERT. SCALE	1"=5'
CHECKED	THG	DATE	SEPTEMBER 26, 2003

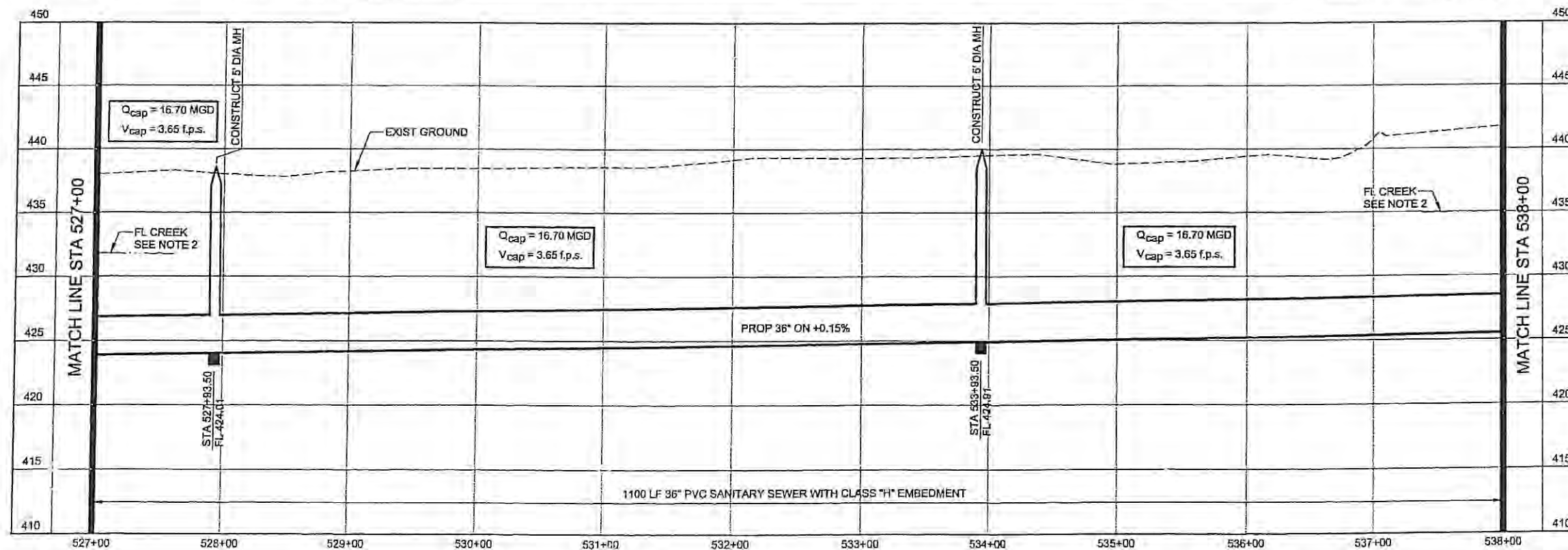


HORIZONTAL CONTROL DATA			
COORDINATES			
MH STATION	NORTH	EAST	DELTA
527+93.50	6990854.26	2598480.72	00° 00' 00"
533+93.50	6991407.18	2598713.70	00° 00' 00"

SURVEY CONTROL			
COORDINATES			
POINT NO	NORTH	EAST	ELEVATION
578	6990927.00	2598426.66	437.98

NOTES:

- SEE SHEET NO. 2 FOR GENERAL PROJECT NOTES.
- FLOW LINE AT BUFFALO CREEK SHOWN FOR REFERENCE ONLY.



**NORTH TEXAS MUNICIPAL
WATER DISTRICT**
ROCKWALL-HEATH
TRANSFER SEWER
RHCF 01-1, SECTION 2
SANITARY SEWER
PLAN AND PROFILE
527+00 TO 538+00

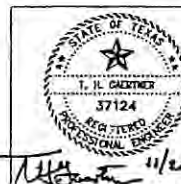
KBR
Kellogg Brown & Root, Inc.
Engineered by KBR Technical Services, Inc.

DESIGNED	KBR	HORIZ. SCALE	1"=50'
DRAWN	KBR	VERT. SCALE	1"=5'
CHECKED	THG	DATE	SEPTEMBER 26, 2003
NO.	DATE	REVISIONS	MADE/CKD
JOB NO.		CM-0148	DWG. NO.
			7 OF 36

CADD DWG FILE NO:

PP2-07.DWG

0 1 2 3 ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS



11/20/03

NO DATE

REVISIONS

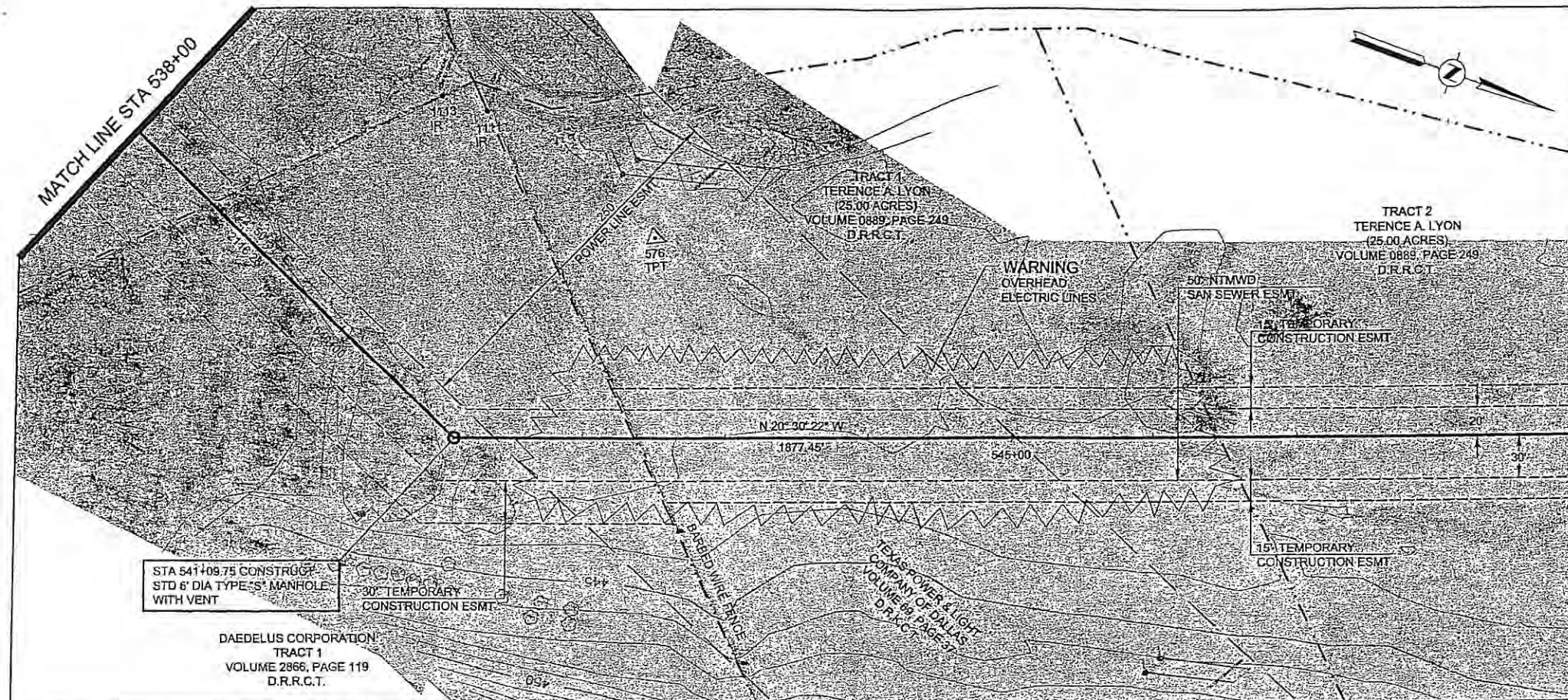
MADE/CKD

JOB NO.

CM-0148

DWG. NO.

7 OF 36

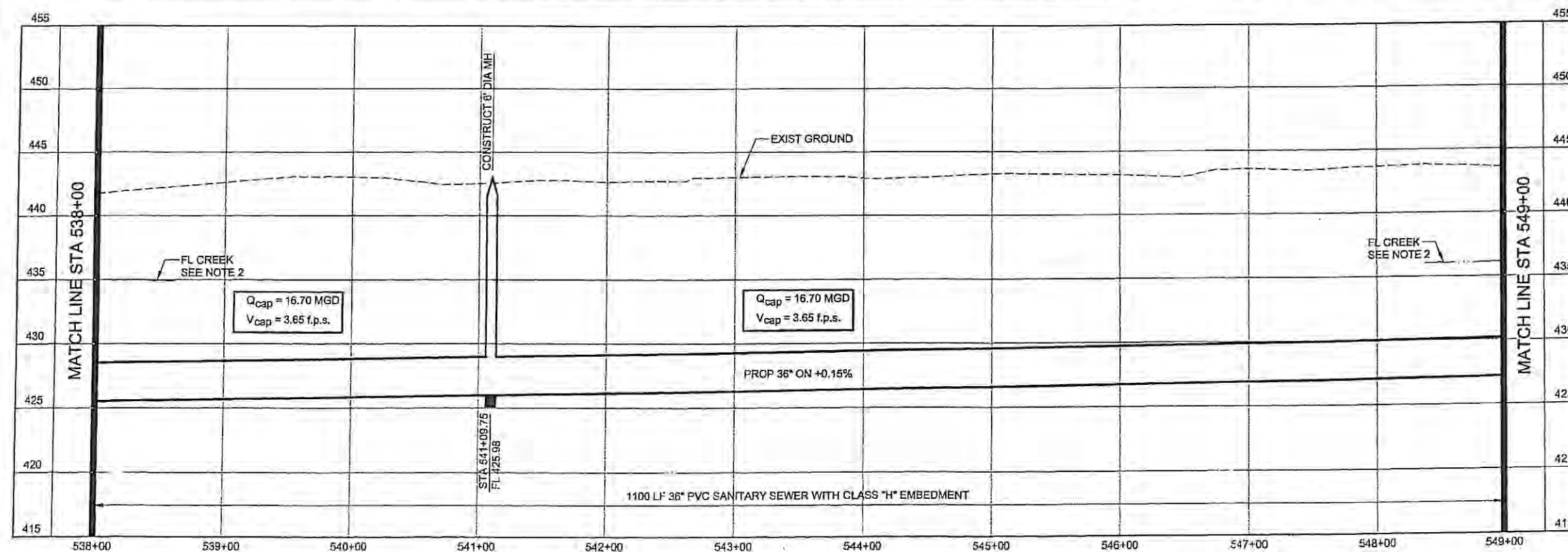


HORIZONTAL CONTROL DATA			
COORDINATES			
MH STATION	NORTH	EAST	DELTA
541+09.75	6992067.22	2598991.83	43° 21' 19" LT

SURVEY CONTROL			
COORDINATES			
POINT NO	NORTH	EAST	ELEVATION
576	6992148.81	2598811.90	442.57
1111 (IR)	6992006.71	2598771.72	442.72
1113 (IR)	6991973.20	2598773.64	442.71

NOTES:

- SEE SHEET NO. 2 FOR GENERAL PROJECT NOTES.
- FLOW LINE AT BUFFALO CREEK SHOWN FOR REFERENCE ONLY.



**NORTH TEXAS MUNICIPAL
WATER DISTRICT**

**ROCKWALL-HEATH
TRANSFER SEWER
RHCf 01-1, SECTION 2**

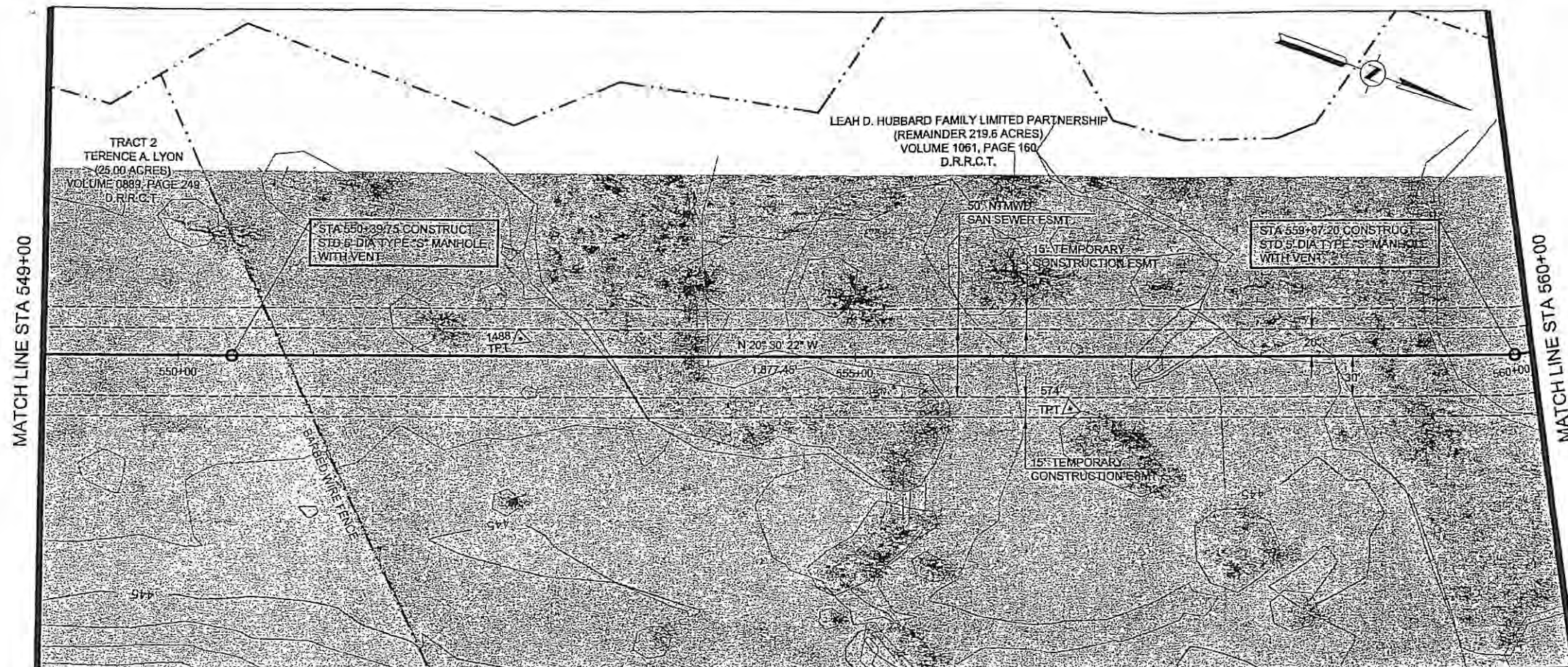
**SANITARY SEWER
PLAN AND PROFILE
538+00 TO 549+00**

KBR

Kellogg Brown & Root, Inc.
Engineered by KBR Technical Services, Inc.

DESIGNED	KBR	HORIZ SCALE	1"=50'
DRAWN	KBR	VERT. SCALE	1"=5'
CHECKED	THG	DATE	SEPTEMBER 26, 2003
		JOB NO.	CM-0148
		DWG. NO.	8 OF 36



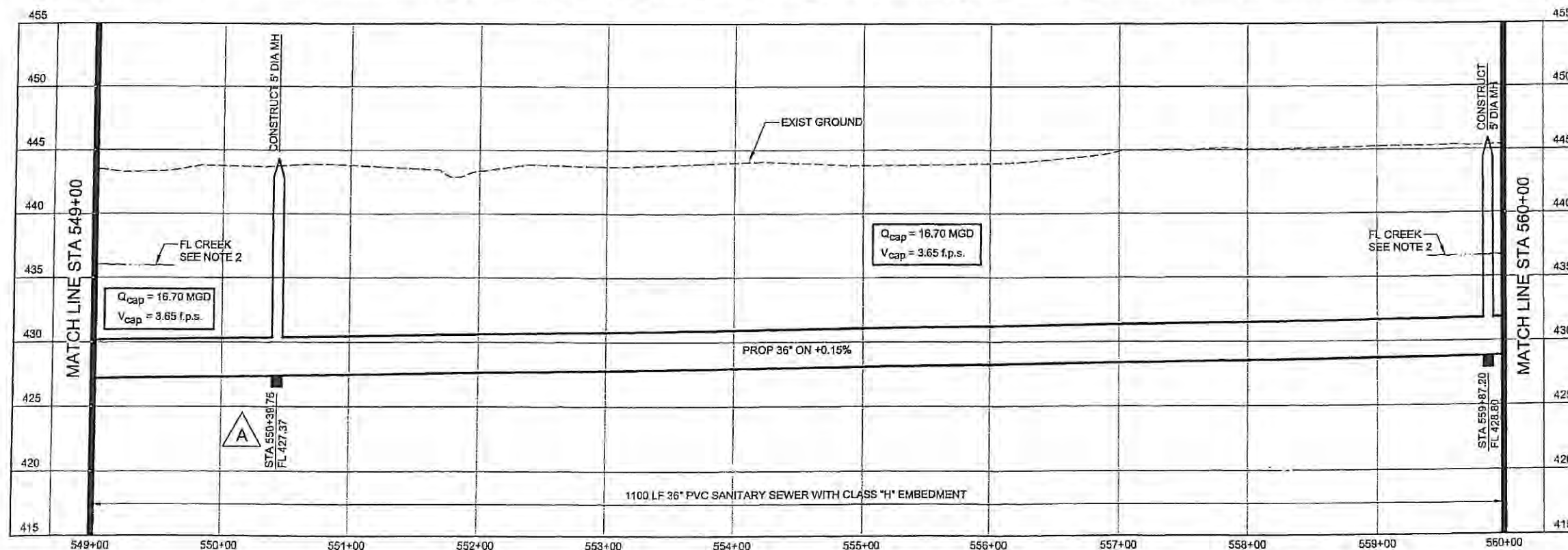


HORIZONTAL CONTROL DATA			
COORDINATES			
MH STATION	NORTH	EAST	DELTA
550+39.75	6992938.29	2598666.04	00° 00' 00"
559+87.20	6993825.71	2598334.14	07° 39' 36" LT

SURVEY CONTROL			
COORDINATES			
POINT NO	NORTH	EAST	ELEVATION
574	6993532.08	2598484.92	444.32
1488	6993132.93	2598579.28	443.86

NOTES:

- SEE SHEET NO. 2 FOR GENERAL PROJECT NOTES.
- FLOW LINE AT BUFFALO CREEK SHOWN FOR REFERENCE ONLY.



**NORTH TEXAS MUNICIPAL
WATER DISTRICT**
**ROCKWALL-HEATH
TRANSFER SEWER
RHCf 01-1, SECTION 2**
**SANITARY SEWER
PLAN AND PROFILE
549+00 TO 560+00**

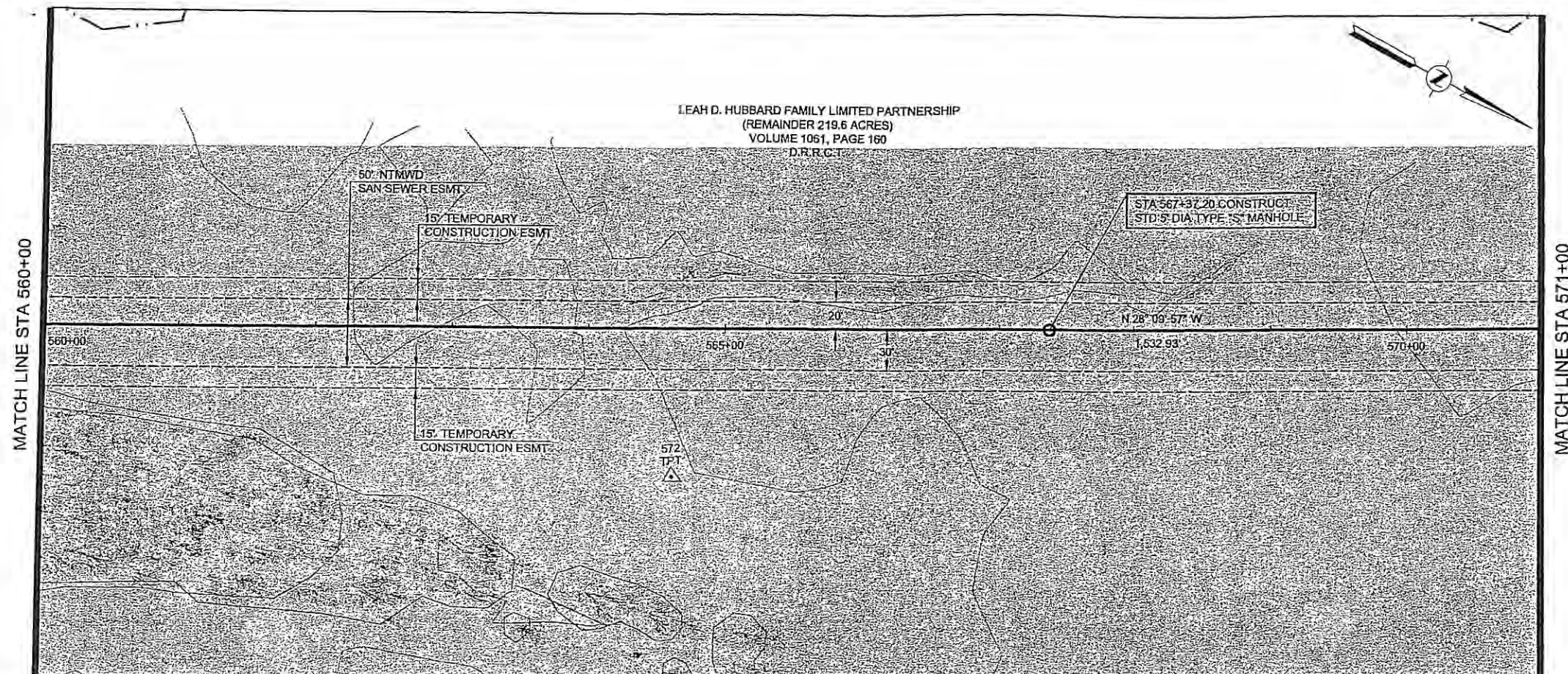
KBR

Kellogg Brown & Root, Inc.
Engineered by KBR Technical Services, Inc.

DESIGNED	KBR	HORIZ. SCALE	1"=50'
DRAWN	KBR	VERT. SCALE	1"=5'
CHECKED	THG	DATE	SEPTEMBER 26, 2003
MADE	CKD	JOB NO.	CM-0148
DWG. NO.	9 OF 36		



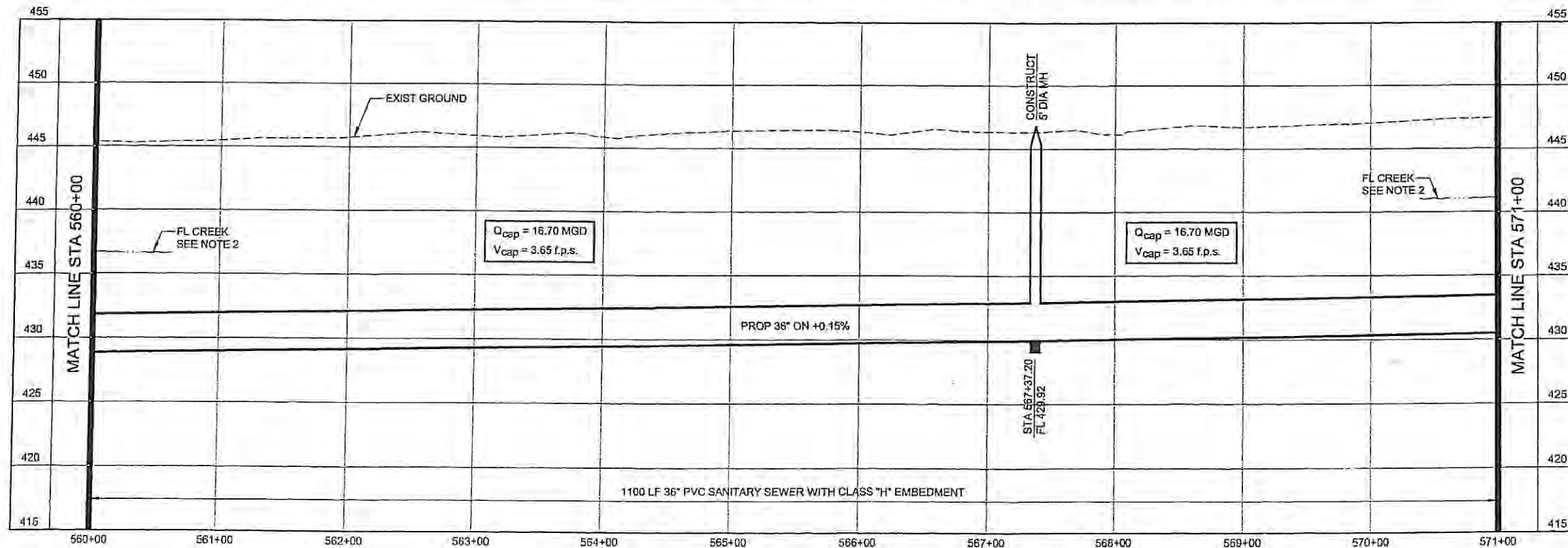
NO.	DATE	REVISIONS	MADE	CKD	JOB NO.
1	11/4/03	Moved manhole to the correct stationing.	THG	THG	



HORIZONTAL CONTROL DATA			
COORDINATES			
MH STATION	NORTH	EAST	DELTA
567+37.20	6994486.89	2597980.12	00° 00' 00"

SURVEY CONTROL			
COORDINATES			
POINT NO	NORTH	EAST	ELEVATION
572	6994295.22	2598205.89	445.91

- NOTES:**
- SEE SHEET NO. 2 FOR GENERAL PROJECT NOTES.
 - FLOW LINE AT BUFFALO CREEK SHOWN FOR REFERENCE ONLY.



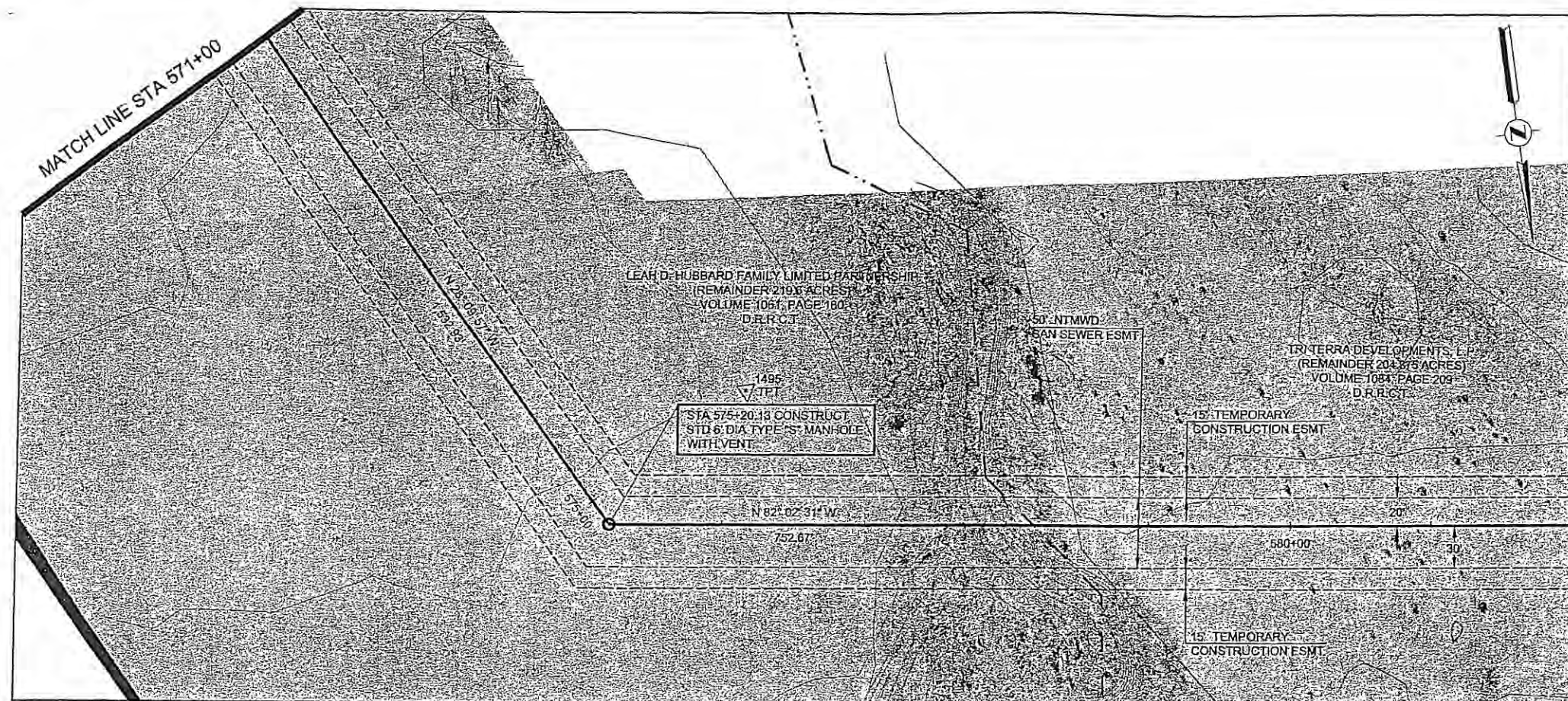
NORTH TEXAS MUNICIPAL WATER DISTRICT
ROCKWALL-HEATH TRANSFER SEWER
RHCF 01-1, SECTION 2
SANITARY SEWER
PLAN AND PROFILE
560+00 TO 571+00

KBR
Kellogg Brown & Root, Inc.
Engineered by KBR Technical Services, Inc.

DESIGNED	KBR	HORIZ. SCALE	1"=50'
DRAWN	KBR	VERT. SCALE	1"=5'
CHECKED	THG	DATE	SEPTEMBER 26, 2003
MADE/CKD	JOB NO.	CM-0148	DWG. NO. 10 OF 36



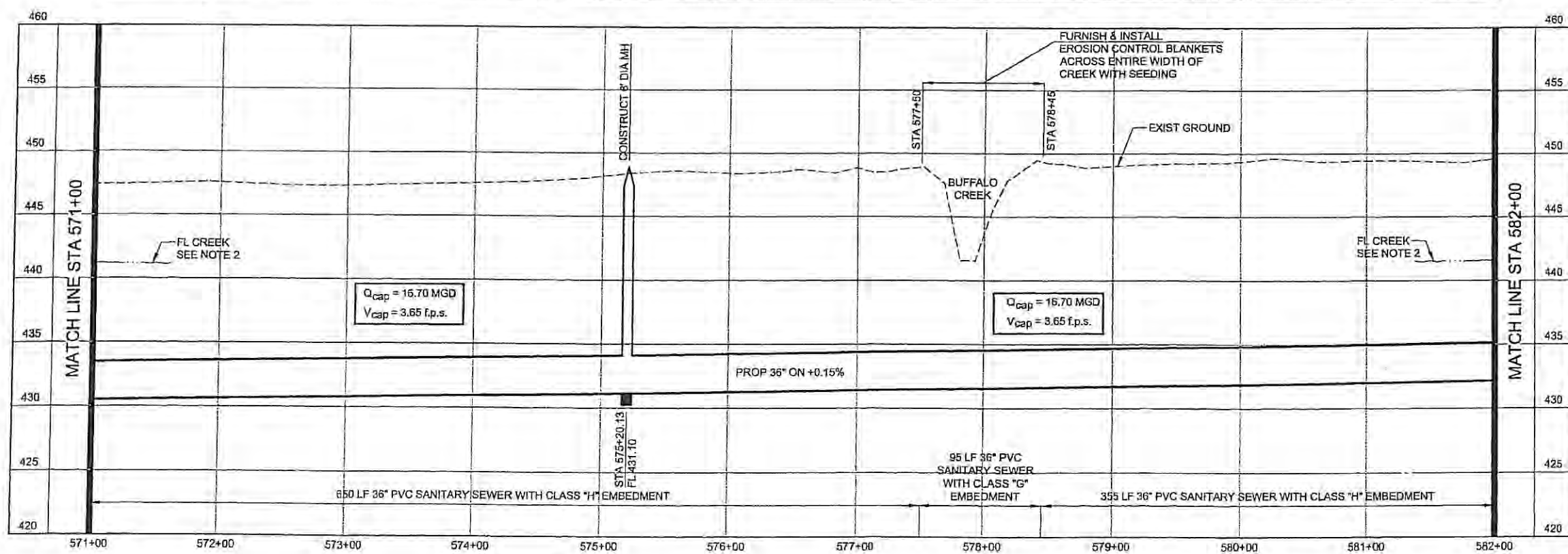
NO	DATE	REVISIONS	MADE/CKD	JOB NO.



HORIZONTAL CONTROL DATA			
COORDINATES			
MH STATION	NORTH	EAST	DELTA
575+20.13	6995177.12	2597610.56	53° 52' 33" LT

SURVEY CONTROL			
COORDINATES			
POINT NO	NORTH	EAST	ELEVATION
1495	6995096.65	2597503.08	448.28

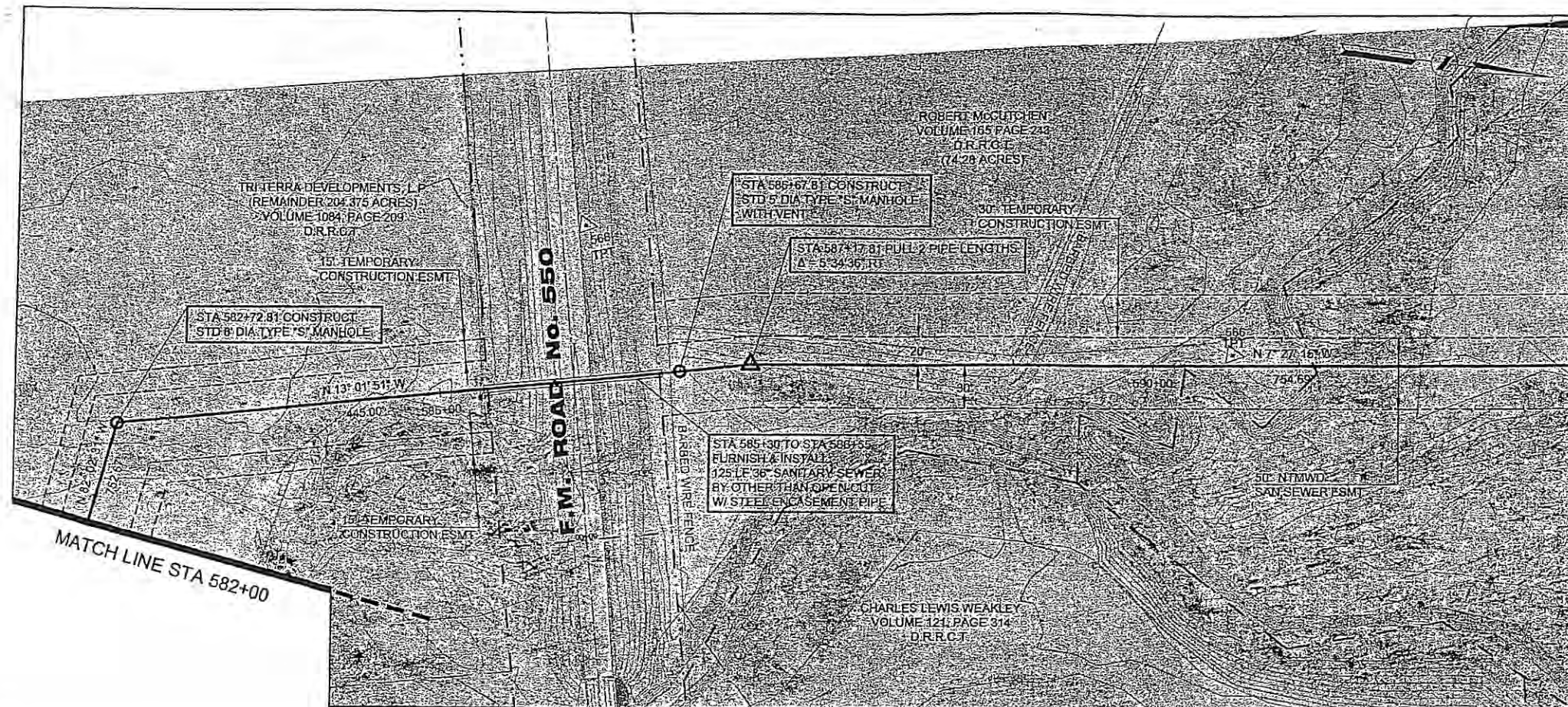
- NOTES:**
- SEE SHEET NO. 2 FOR GENERAL PROJECT NOTES.
 - FLOW LINE AT BUFFALO CREEK SHOWN FOR REFERENCE ONLY.



NORTH TEXAS MUNICIPAL WATER DISTRICT
ROCKWALL-HEATH TRANSFER SEWER
RHCF 01-1, SECTION 2
SANITARY SEWER PLAN AND PROFILE
571+00 TO 582+00



NO	DATE	REVISIONS	MADE/CKD	JOB NO.	CM-0148	DWG. NO.	11 OF 36

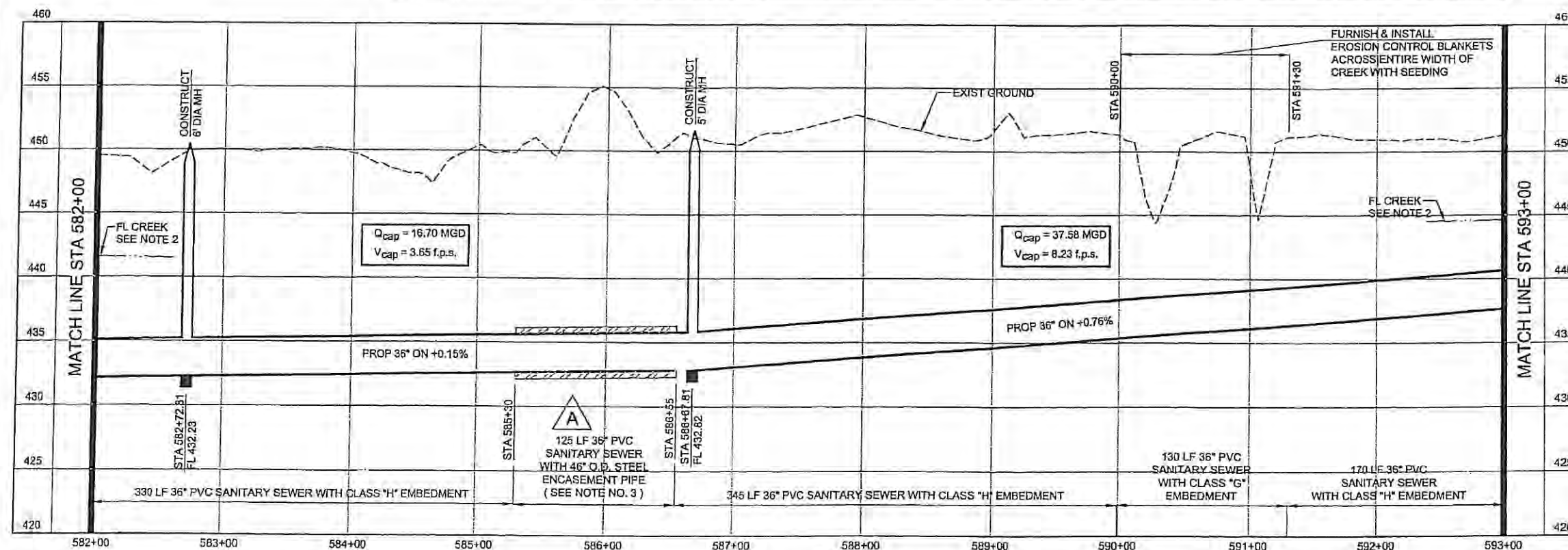


HORIZONTAL CONTROL DATA			
COORDINATES			
MH STATION	NORTH	EAST	DELTA
582+72.81	6995281.33	2596865.14	89° 00' 39" RT
586+67.81	6995666.15	2596776.07	00° 00' 00"

SURVEY CONTROL			
COORDINATES			
POINT NO	NORTH	EAST	ELEVATION
587+17.81	6995714.87	2596764.80	
566	6996048.20	2596713.61	451.08
568	6995585.74	2596684.43	453.37

NOTES:

- SEE SHEET NO. 2 FOR GENERAL PROJECT NOTES.
- FLOW LINE AT BUFFALO CREEK SHOWN FOR REFERENCE ONLY.
- MINIMUM WALL THICKNESS FOR THE STEEL ENCASUREMENT PIPE SHALL BE 5/8".



NORTH TEXAS MUNICIPAL
WATER DISTRICT
ROCKWALL-HEATH
TRANSFER SEWER
RHCF 01-1, SECTION 2
SANITARY SEWER
PLAN AND PROFILE
582+00 TO 593+00

KBR

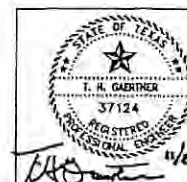
Kellogg Brown & Root, Inc.
Engineered by KBR Technical Services, Inc.

DESIGNED: KBR
DRAWN: KBR
CHECKED: THG
DATE: SEPTEMBER 26, 2003

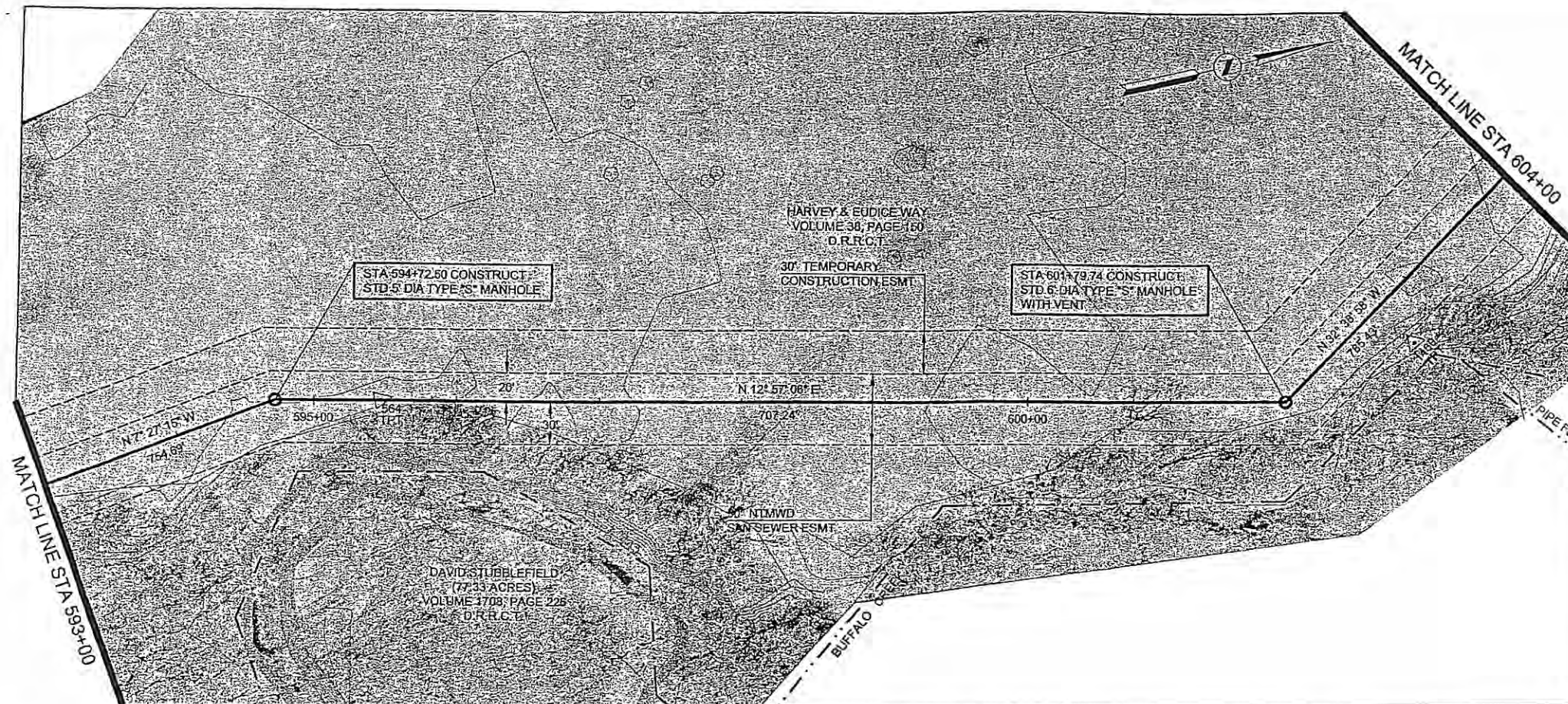
CM-0148

DWG. NO.

12 OF 36



NO	DATE	REVISIONS	MADE	CHECKED	JOB NO.
A	11/11/03	Added encasement pipe size and wall thickness.	THG	THG	

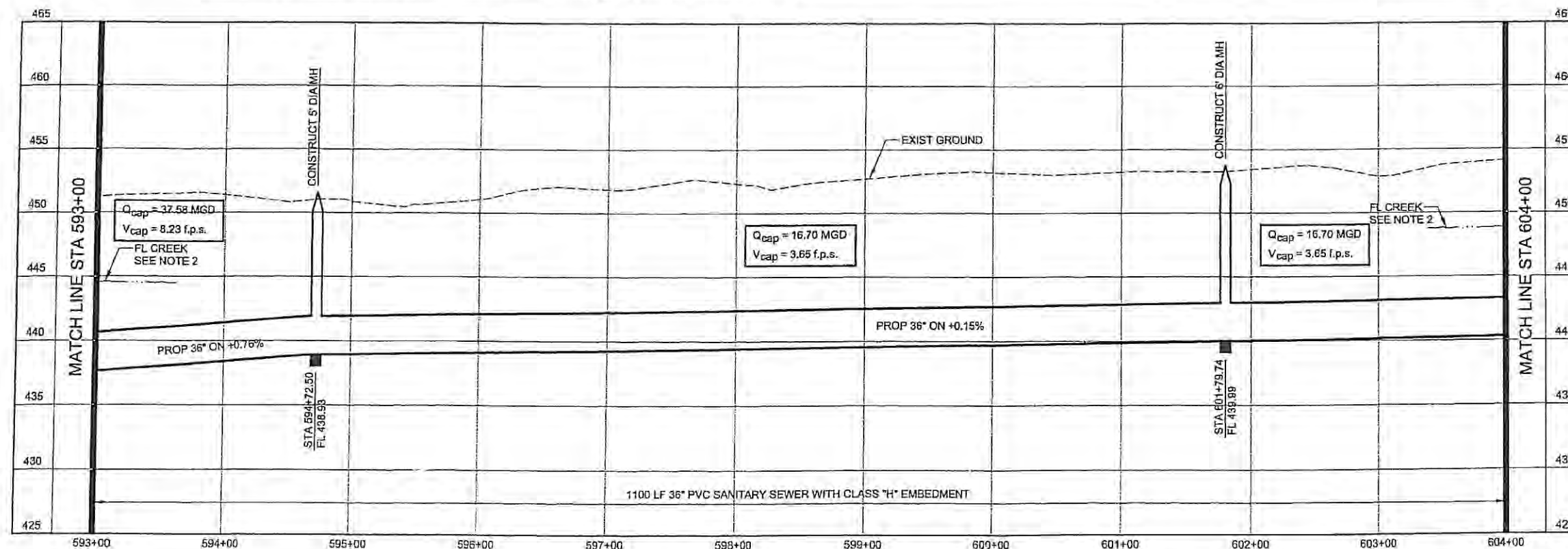


HORIZONTAL CONTROL DATA			
COORDINATES			
MH STATION	NORTH	EAST	DELTA
594+72.50	6996463.18	2596666.89	20° 24' 21" RT
601+79.74	6997152.43	2596825.40	45° 35' 05" LT

SURVEY CONTROL			
COORDINATES			
POINT NO	NORTH	EAST	ELEVATION
564	6996535.44	2596683.17	450.60
1460	6997249.82	2596805.40	453.61

NOTES:

- SEE SHEET NO. 2 FOR GENERAL PROJECT NOTES.
- FLOW LINE AT BUFFALO CREEK SHOWN FOR REFERENCE ONLY.




NORTH TEXAS MUNICIPAL WATER DISTRICT
 ROCKWALL-HEATH
 TRANSFER SEWER
 RHCF 01-1, SECTION 2
 SANITARY SEWER
 PLAN AND PROFILE
 593+00 TO 604+00

KBR
 Kellogg Brown & Root, Inc.
 Engineered by KBR Technical Services, Inc.

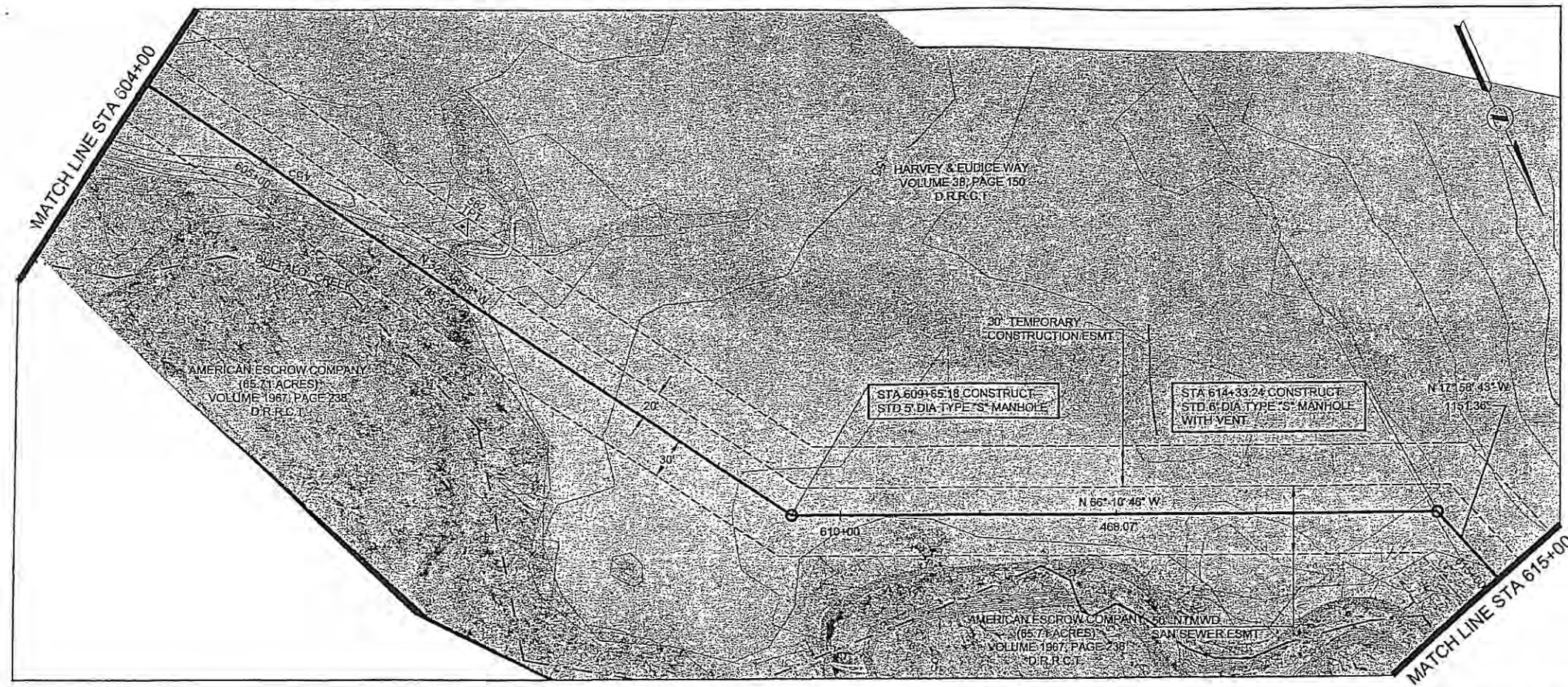
DESIGNED	KBR	HORIZ. SCALE	1"=50'
DRAWN	KBR	VERT. SCALE	1"=5'
CHECKED	THG	DATE	SEPTEMBER 26, 2003
JOB NO.	CM-0148	DWG. NO.	13 OF 36



NO	DATE	REVISIONS	MADE	CKD

CADD DWG FILE NO: PP2-13.DWG

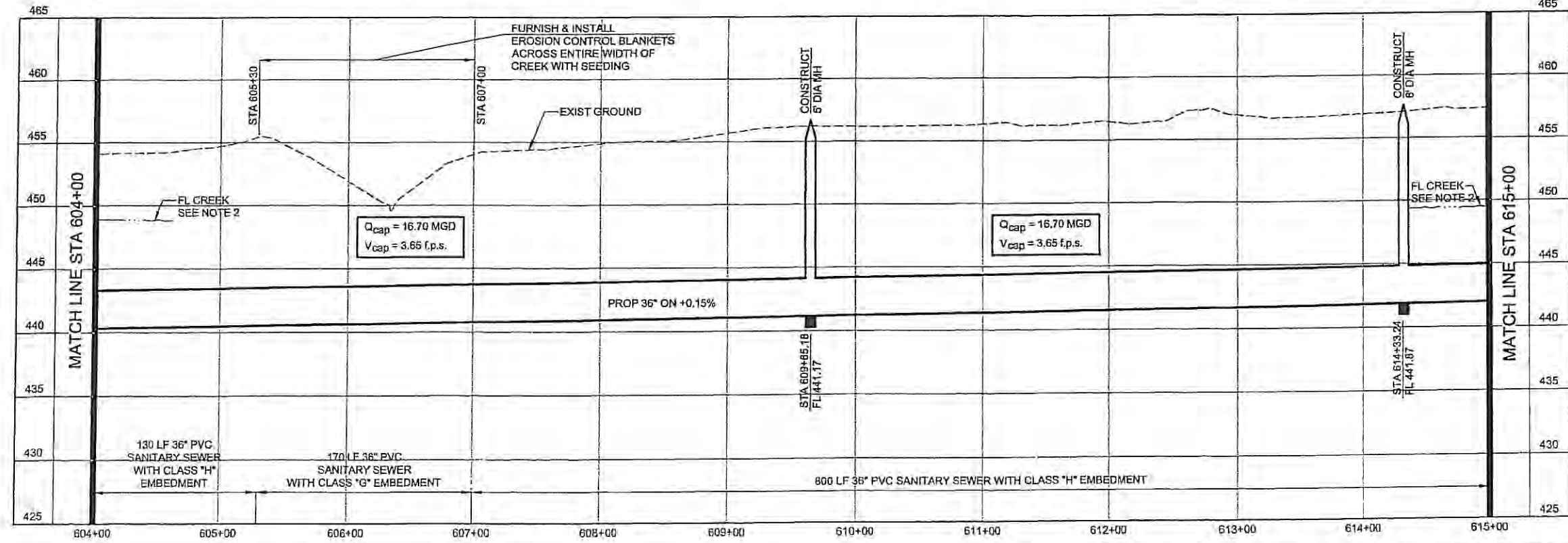
ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS



HORIZONTAL CONTROL DATA			
COORDINATES			
MH STATION	NORTH	EAST	DELTA
609+65.18	6997813.76	2596401.66	33° 31' 48" LT
614+33.24	6998002.80	2595973.47	48° 12' 03" RT

SURVEY CONTROL			
COORDINATES			
POINT NO	NORTH	EAST	ELEVATION
562	6997524.31	2596536.53	453.70

- NOTES:**
- SEE SHEET NO. 2 FOR GENERAL PROJECT NOTES.
 - FLOW LINE AT BUFFALO CREEK SHOWN FOR REFERENCE ONLY.



NORTH TEXAS MUNICIPAL WATER DISTRICT
ROCKWALL-HEATH TRANSFER SEWER
RHCF 01-1, SECTION 2
SANITARY SEWER PLAN AND PROFILE
604+00 TO 615+00

KBR
 Kellogg Brown & Root, Inc.
 Engineered by KBR Technical Services, Inc.

DESIGNED	KBR	HORIZ. SCALE	1"=50'
DRAWN	KBR	VERT. SCALE	1"=5'
CHECKED	THG	DATE	SEPTEMBER 26, 2003
MADE/CKD	JOB NO.	CM-0148	DWG. NO.

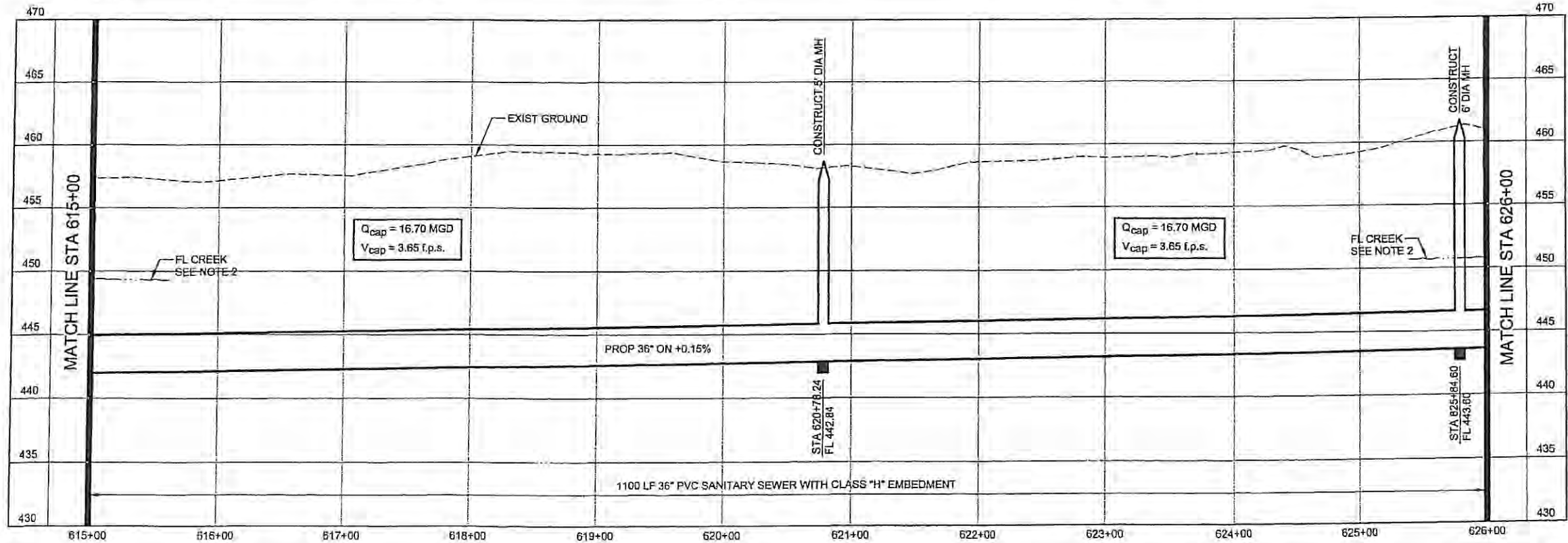
14 OF 36



HORIZONTAL CONTROL DATA			
COORDINATES			
MH STATION	NORTH	EAST	DELTA
620+78.24	6998516.56	2595774.29	00° 00' 00"
625+84.60	6998097.94	2595618.09	62° 40' 34" RT

SURVEY CONTROL			
COORDINATES			
POINT NO	NORTH	EAST	ELEVATION
556	6998701.65	2595709.07	459.89
560	6998064.20	2595937.48	457.49

- NOTES:
- SEE SHEET NO. 2 FOR GENERAL PROJECT NOTES.
 - FLOW LINE AT BUFFALO CREEK SHOWN FOR REFERENCE ONLY.



**NORTH TEXAS MUNICIPAL
WATER DISTRICT**
**ROCKWALL-HEATH
TRANSFER SEWER
RHCF 01-1, SECTION 2**
**SANITARY SEWER
PLAN AND PROFILE
615+00 TO 626+00**

KBR
Kellogg Brown & Root, Inc.
 Engineers by KBR Technical Services, Inc.

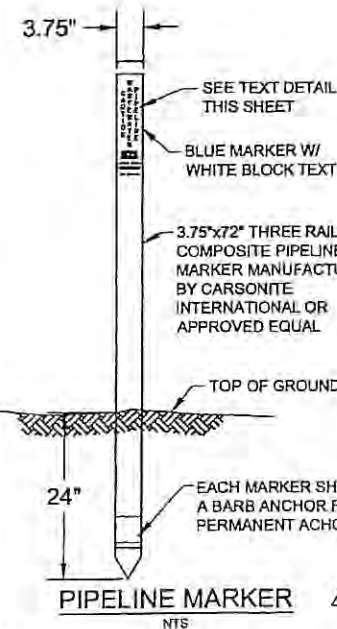
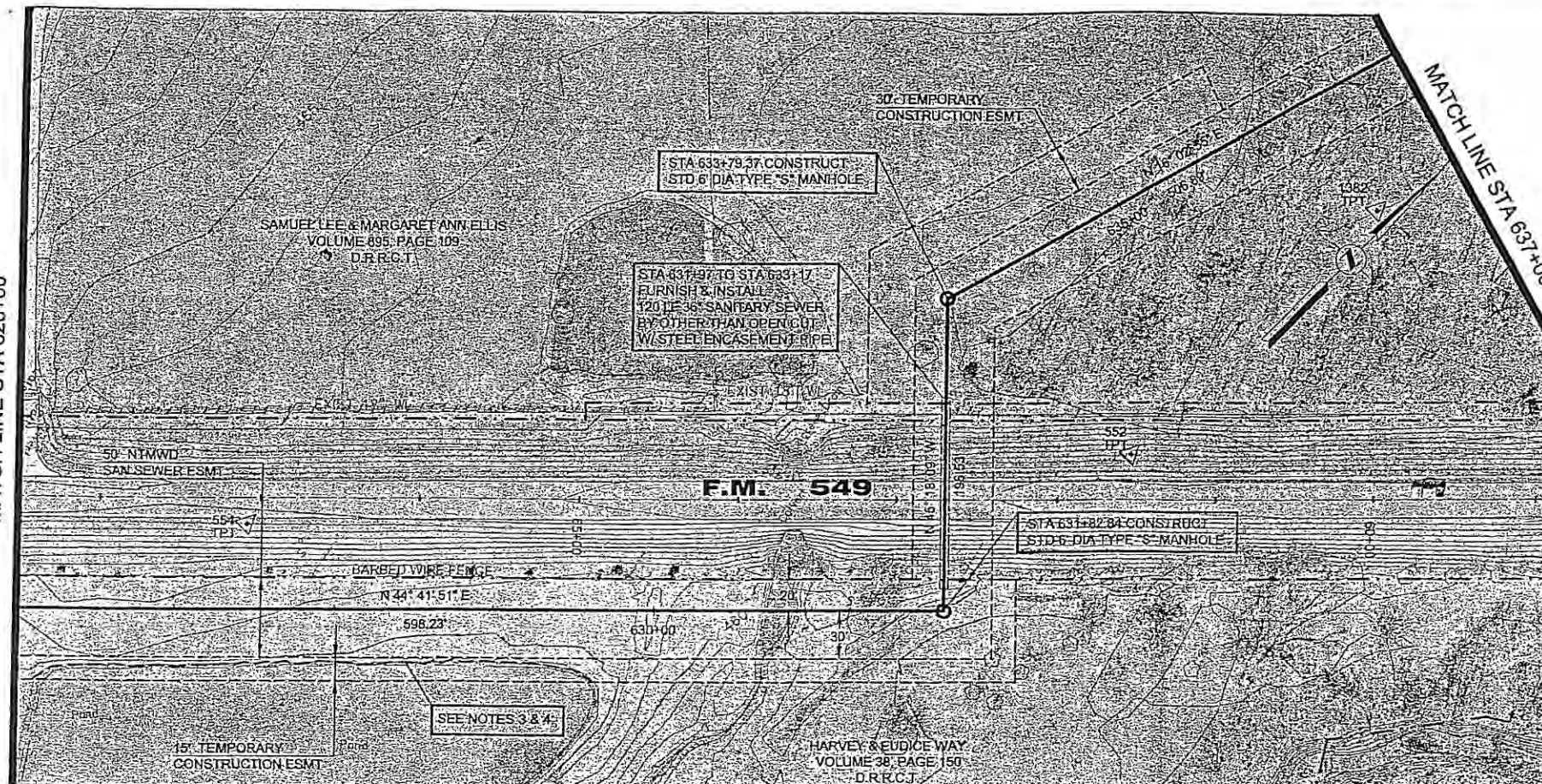
DESIGNED	KBR	HORIZ. SCALE	1"=50'
DRAWN	KBR	VERT. SCALE	1"=5'
CHECKED	THG	DATE	SEPTEMBER 26, 2003

CADD DWG FILE NO: PP2-15.DWG
 ORIGINAL SCALE IN INCHES

NO. DATE REVISIONS MADE/CKD JOB NO. CM-0148 DWG. NO. 15 OF 36



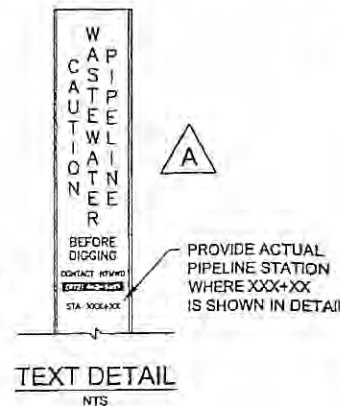
MATCH LINE STA 626+00



- NOTES:
1. MARKER SHALL BE LOCATED ON BOTH SIDES OF ALL ROADS AND RAILROADS AT THE R.O.W. LINES OVER THE CENTER OF THE PIPELINE.
 2. EACH MARKER SHALL HAVE A STICKER WITH THE FOLLOWING INFORMATION "CAUTION WASTEWATER PIPELINE - CONTACT NTMWD (972) 442-5405, STA. XXX+XX" (SEE TEXT DETAIL THIS SHEET).
 3. CONTRACTOR SHALL PROVIDE THE OWNER A POST DRIVER (PART #PDR1), A POST PULLER, AND 5 ADDITIONAL PIPELINE MARKERS.

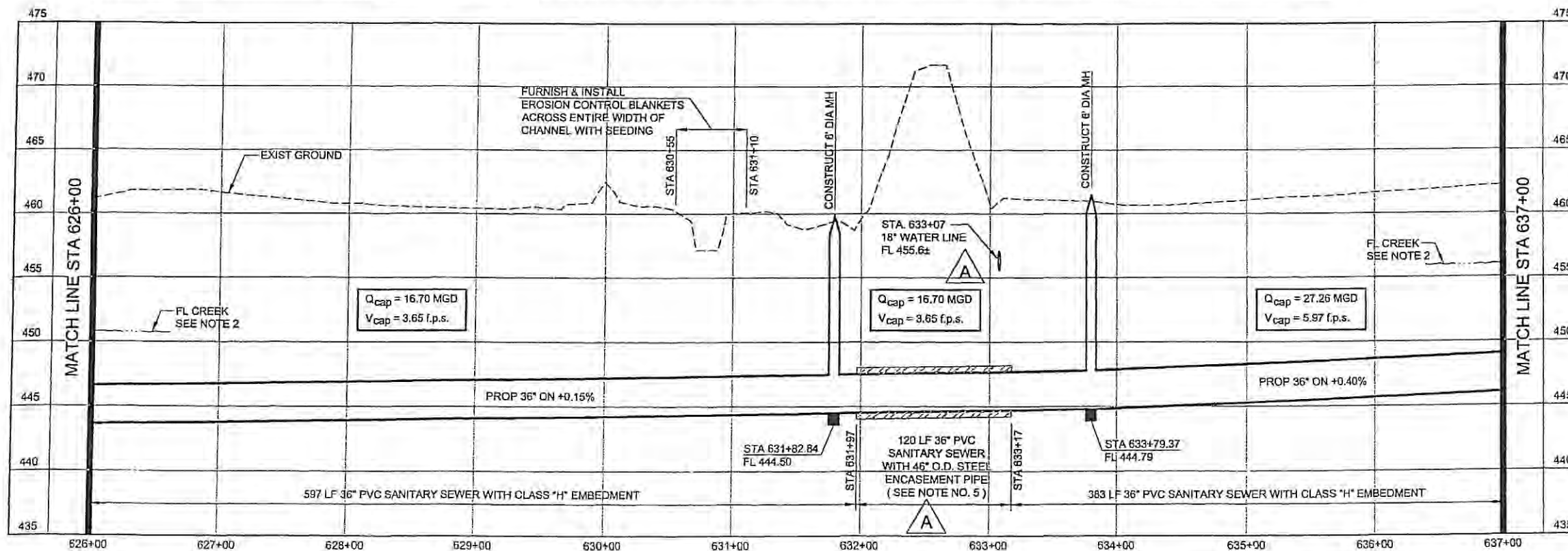
HORIZONTAL CONTROL DATA			
COORDINATES			
MH STATION	NORTH	EAST	DELTA
631+82.84	6999523.18	2596038.86	90° 00' 00" LT
633+79.37	6999561.41	2595899.16	61° 21' 04" RT

SURVEY CONTROL			
COORDINATES			
POINT NO	NORTH	EAST	ELEVATION
552	6999574.53	2596049.85	466.72
554	6999246.97	2595591.96	468.98
1382	6999892.77	2596050.56	462.13



NOTES:

1. SEE SHEET NO. 2 FOR GENERAL PROJECT NOTES.
2. FLOW LINE AT BUFFALO CREEK SHOWN FOR REFERENCE ONLY.
3. CONTRACTOR SHALL INSTALL EROSION CONTROL SILT FENCING PRIOR TO CONSTRUCTION AND SHALL BE RESPONSIBLE FOR PREVENTING CONSTRUCTION ACTIVITIES FROM DISTURBING POND.
4. CONTRACTOR SHALL UTILIZE TRENCH SAFETY AND WELL POINT SYSTEMS AS REQUIRED TO MAINTAIN TRENCH INTEGRITY DURING INSTALLATION OF THE SEWER RUNNING ALONG THE EDGE OF THE POND.
3. MINIMUM WALL THICKNESS FOR THE STEEL ENCASUREMENT PIPE SHALL BE 5/8".

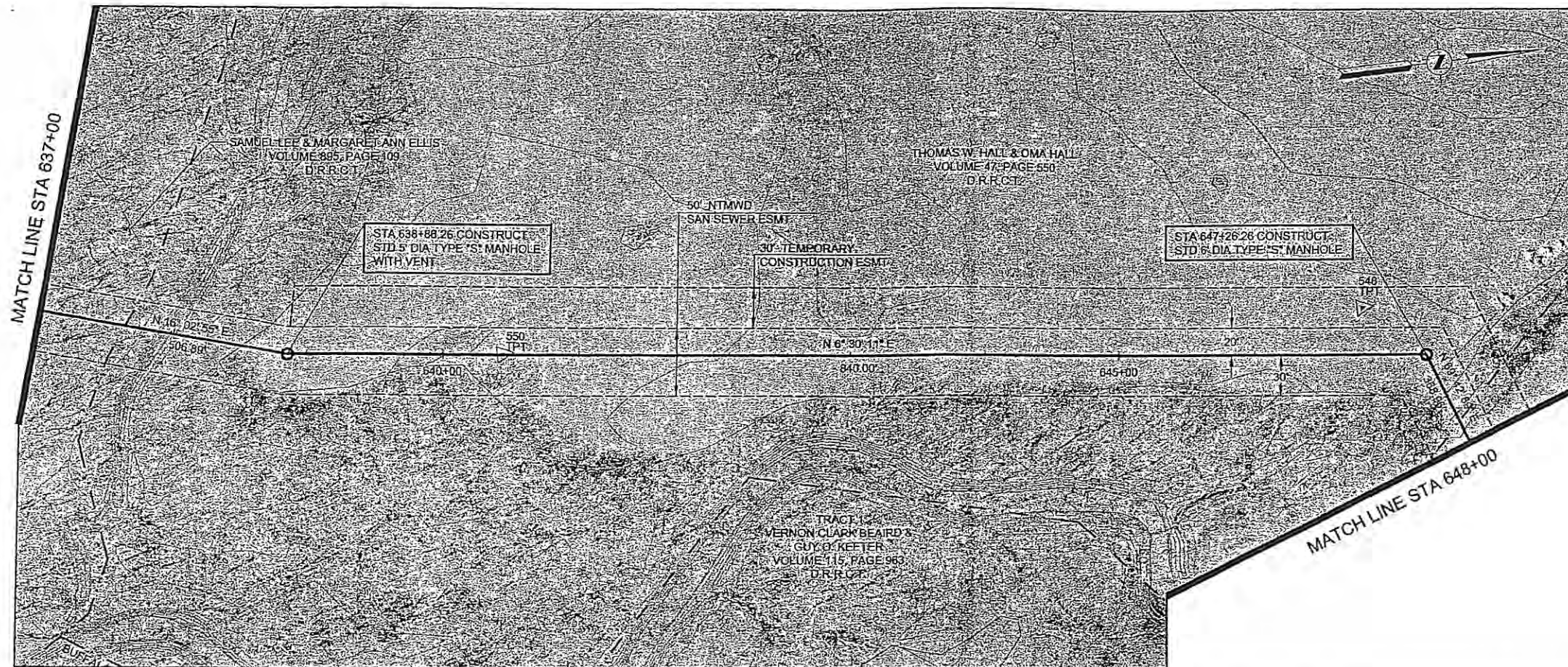


NORTH TEXAS MUNICIPAL
WATER DISTRICT
ROCKWALL-HEATH
TRANSFER SEWER
RHCF 01-1, SECTION 2
SANITARY SEWER
PLAN AND PROFILE
626+00 TO 637+00



A	11/6/03	Added 18" water line to profile.	THG	THG
A	11/6/03	Added encasement pipe size and wall thickness.	THG	THG
A	11/11/03	Added Pipeline Marker details and notes.	THG	THG

KBR			
Kellogg Brown & Root, Inc.			
Engineered by KBR Technical Services, Inc.			
DESIGNED	KBR	HORIZ. SCALE	1"=50'
DRAWN	KBR	VERT. SCALE	1"=5'
CHECKED	THG	DATE	SEPTEMBER 26, 2003
NO DATE		REVISIONS	MANECKN JOB NO
			CM-0148
			DWG. NO.

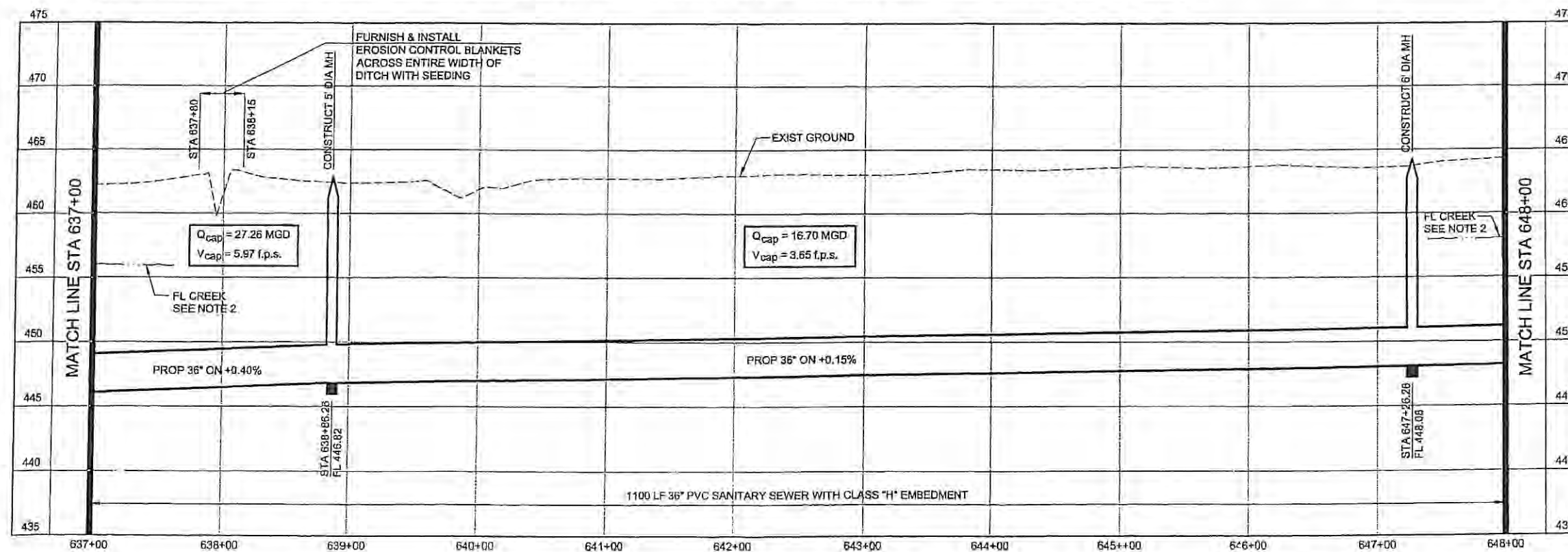


HORIZONTAL CONTROL DATA			
COORDINATES			
MH STATION	NORTH	EAST	DELTA
638+86.26	7000148.55	2596039.30	09° 32' 44" LT
647+26.26	7000963.14	2596134.43	63° 12' 47" RT

SURVEY CONTROL			
COORDINATES			
POINT NO	NORTH	EAST	ELEVATION
548	7000940.28	2596094.62	463.72
550	7000305.36	2596056.70	462.68

NOTES:

- SEE SHEET NO. 2 FOR GENERAL PROJECT NOTES.
- FLOW LINE AT BUFFALO CREEK SHOWN FOR REFERENCE ONLY.



NORTH TEXAS MUNICIPAL
WATER DISTRICT
ROCKWALL-HEATH
TRANSFER SEWER
RHC# 01-1, SECTION 2
SANITARY SEWER
PLAN AND PROFILE
637+00 TO 648+00

KBR

Kellogg Brown & Root, Inc.
Engineered by KBR Technical Services, Inc.

DESIGNED	KBR	HORIZ. SCALE	1"=50'
DRAWN	KBR	VERT. SCALE	1"=5'
CHECKED	THG	DATE	SEPTEMBER 26, 2003
JOB NO.	CM-0148	DWG. NO.	17 OF 36



NO.	DATE	REVISIONS	MADE BY	CHECKED BY

CADD DWG FILE NO:

PP2-17.DWG

0

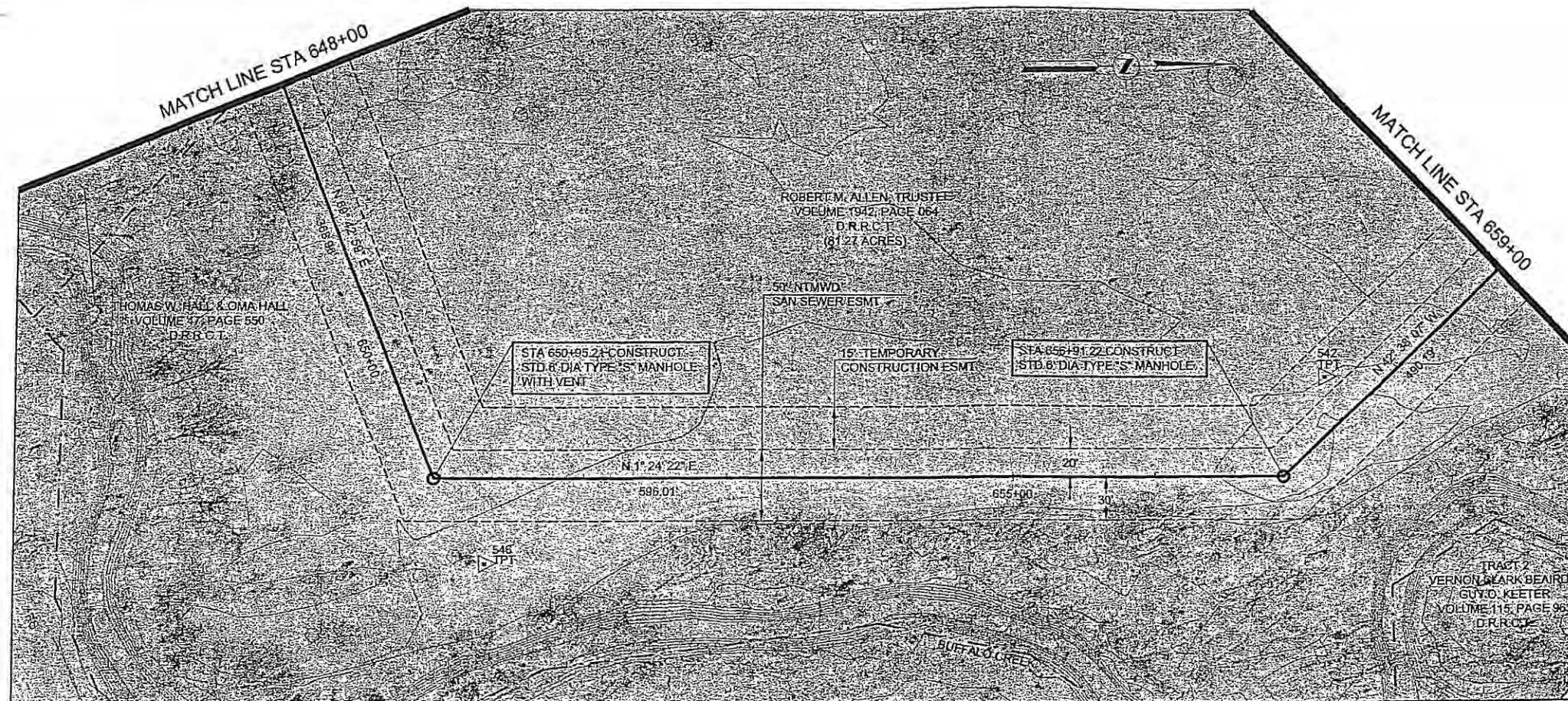
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2

3

ORIGINAL SCALE IN INCHES
FOR REVISION PLANS

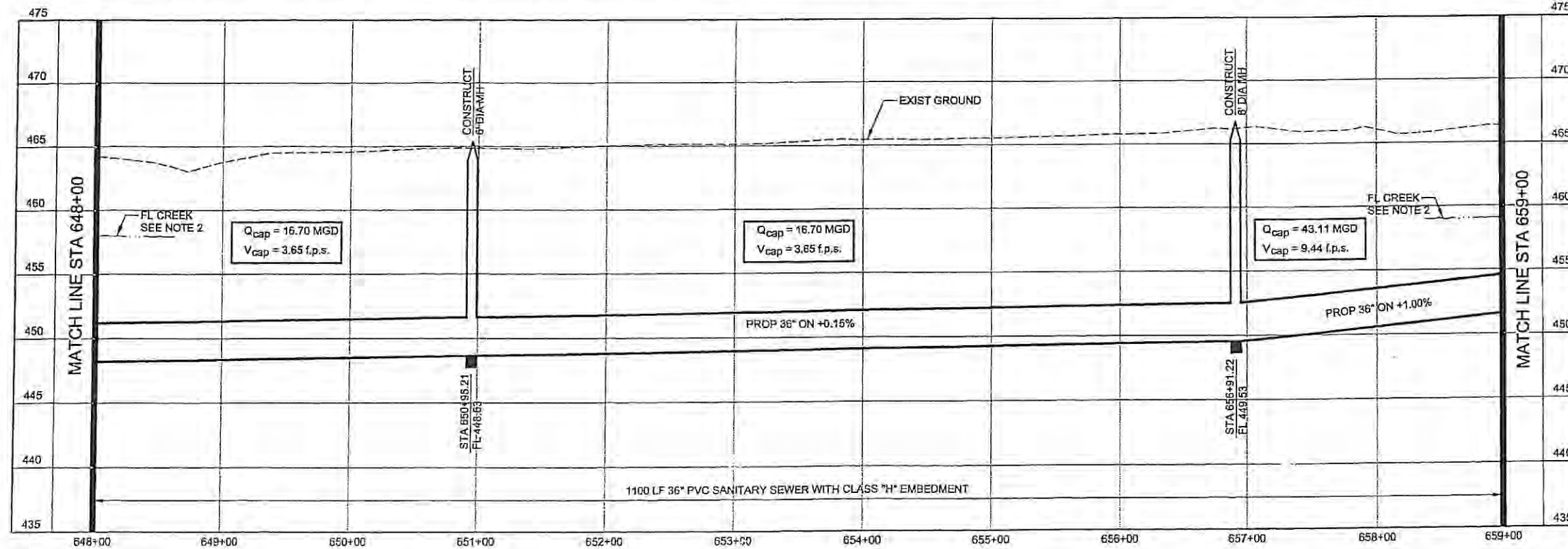
11/20/03



HORIZONTAL CONTROL DATA			
COORDINATES			
MH STATION	NORTH	EAST	DELTA
650+95.21	7001111.05	2596480.51	68° 18' 36" LT
656+91.22	7001706.88	2596495.13	44° 02' 30" LT

SURVEY CONTROL			
COORDINATES			
POINT NO	NORTH	EAST	ELEVATION
542	7001737.18	2596426.32	465.99
546	7001154.67	2596541.43	465.32

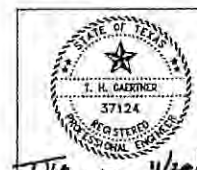
- NOTES:**
- SEE SHEET NO. 2 FOR GENERAL PROJECT NOTES.
 - FLOW LINE AT BUFFALO CREEK SHOWN FOR REFERENCE ONLY.



NORTH TEXAS MUNICIPAL WATER DISTRICT
 ROCKWALL-HEATH TRANSFER SEWER
 RHC# 01-1, SECTION 2
 SANITARY SEWER PLAN AND PROFILE
 648+00 TO 659+00

KBR
 Kellogg Brown & Root, Inc.
 Engineered by KBR Technical Services, Inc.

DESIGNED	KBR	HORIZ. SCALE	1"=50'
DRAWN	KBR	VERT. SCALE	1"=5'
CHECKED	THG	DATE	SEPTEMBER 26, 2003
JOB NO.		CM-0148	DWG NO. 18 OF 36



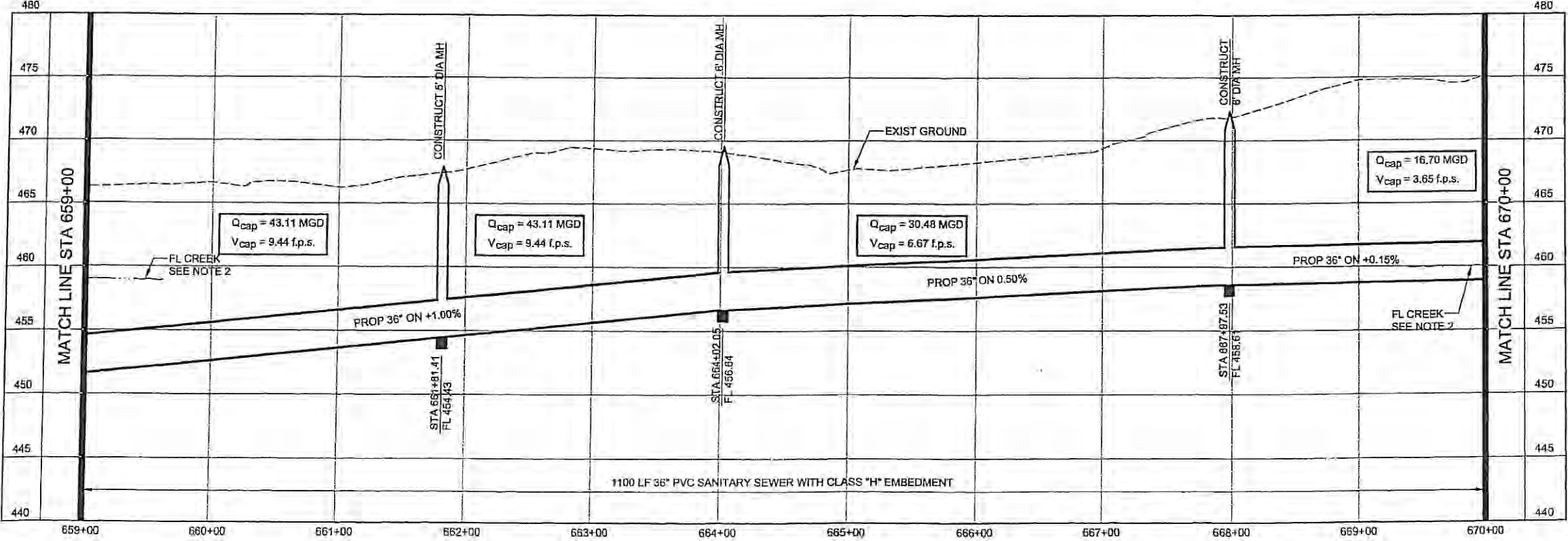
NO.	DATE	REVISIONS	MADE BY	CHECKED	JOB NO.

HORIZONTAL CONTROL DATA			
COORDINATES			
MH STATION	NORTH	EAST	DELTA
661+81.41	7002067.50	2596163.11	11° 22' 00" RT
664+02.05	7002256.09	2596048.59	28° 26' 07" RT
667+97.53	7002551.08	2596029.04	25° 53' 46" LT

SURVEY CONTROL			
COORDINATES			
POINT NO	NORTH	EAST	ELEVATION
538	7002668.17	2596008.76	473.16
540	7002310.76	2596059.81	467.58
1345	7002434.16	2596211.02	464.47
1365	7002030.31	2596239.28	466.70

NOTES:

- SEE SHEET NO. 2 FOR GENERAL PROJECT NOTES.
- FLOW LINE AT BUFFALO CREEK SHOWN FOR REFERENCE ONLY.



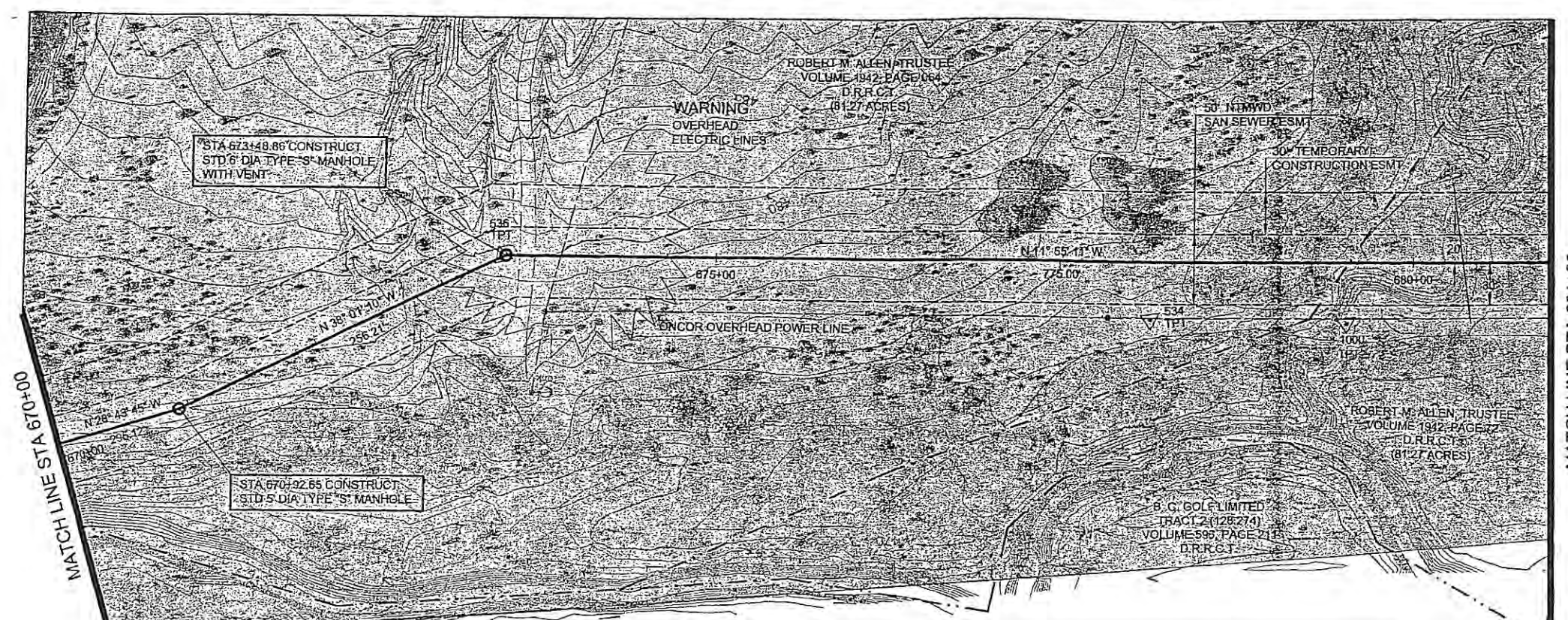
**NORTH TEXAS MUNICIPAL
WATER DISTRICT**
ROCKWALL-HEATH
TRANSFER SEWER
RHCF 01-1, SECTION 2
SANITARY SEWER
PLAN AND PROFILE
659+00 TO 670+00

KBR
Kellogg Brown & Root, Inc.
Engineered by KBR Technical Services, Inc.

DESIGNED	KBR	HORIZ. SCALE	1"=50'
DRAWN	KBR	VERT. SCALE	1"=5'
CHECKED	THG	DATE	SEPTEMBER 26, 2003
NO.	DATE	REVISIONS	MADE/CKD
JOB NO.	CM-0148	DWG. NO.	19 OF 36



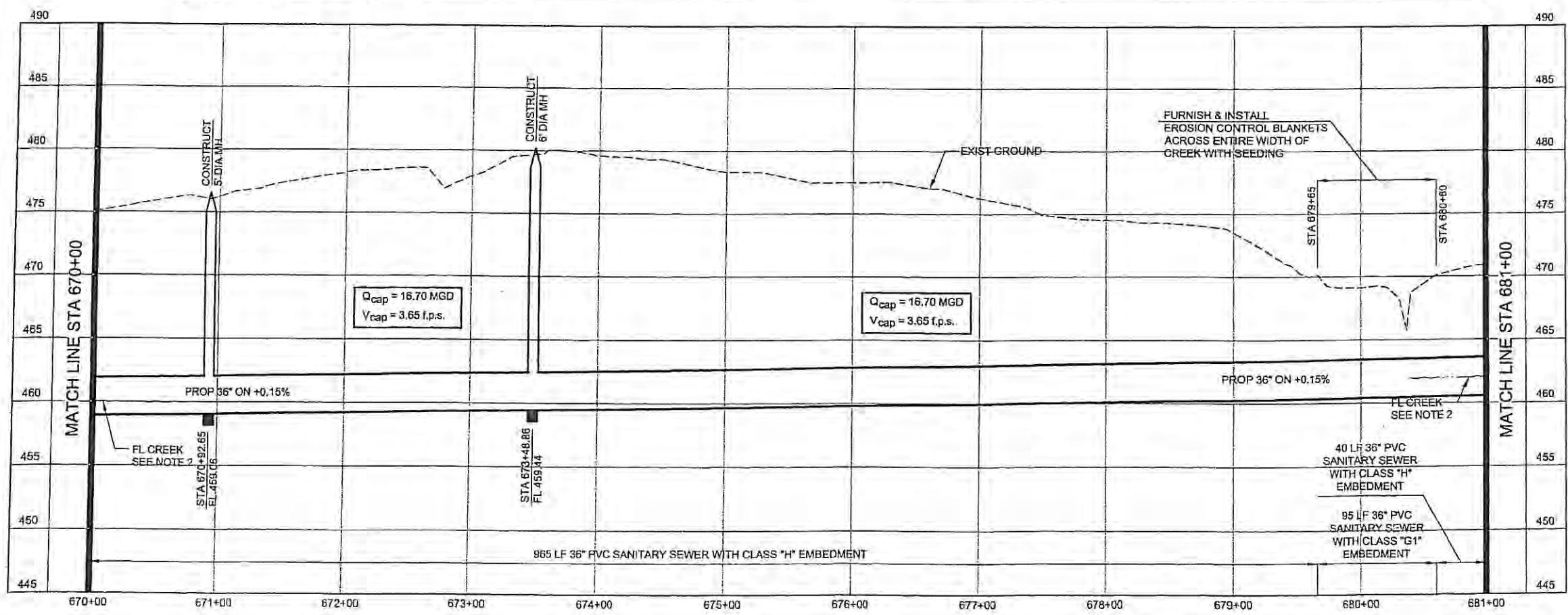
10/20/03



HORIZONTAL CONTROL DATA			
COORDINATES			
MH STATION	NORTH	EAST	DELTA
670+92.65	7002909.87	2595887.19	06° 16' 49" LT
673+48.86	7003111.72	2595729.38	26° 05' 59" RT

SURVEY CONTROL			
COORDINATES			
POINT NO	NORTH	EAST	ELEVATION
534	7003574.69	2595673.64	473.79
535	7003109.45	2595730.93	479.76
1000	7003710.45	2595647.18	467.41

MATCH LINE STA 681+00



- NOTES:**
- SEE SHEET NO. 2 FOR GENERAL PROJECT NOTES.
 - FLOW LINE AT BUFFALO CREEK SHOWN FOR REFERENCE ONLY.

NORTH TEXAS MUNICIPAL WATER DISTRICT

ROCKWALL-HEATH TRANSFER SEWER

RHCF 01-1, SECTION 2

SANITARY SEWER PLAN AND PROFILE

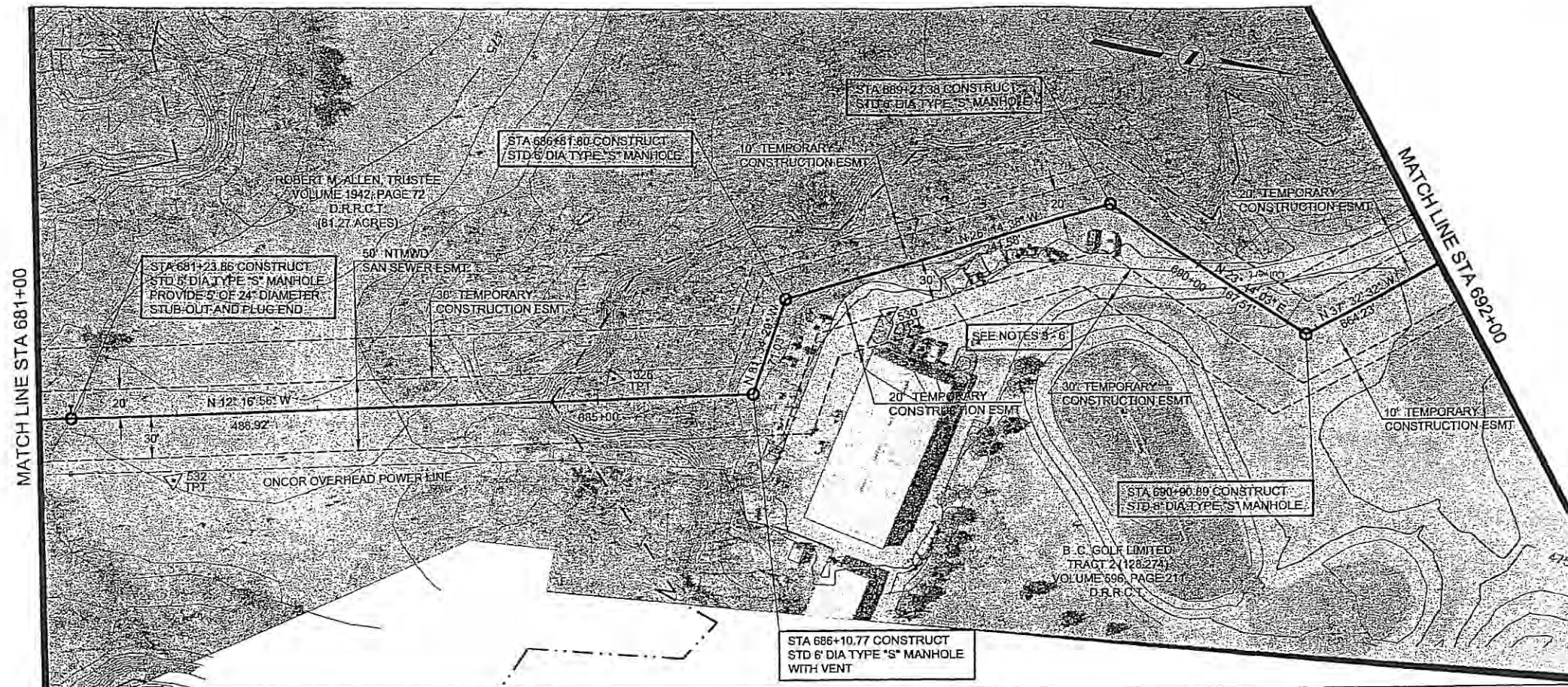
670+00 TO 681+00

KBR
Kellogg Brown & Root, Inc.
Engineered by KBR Technical Services, Inc.

DESIGNED	KBR	HORIZ. SCALE	1"=50'
DRAWN	KBR	VERT. SCALE	1"=5'
CHECKED	THG	DATE	SEPTEMBER 26, 2003
MADE/CKD	CM-0148	DWG. NO.	20 OF 36



NO.	DATE	REVISIONS

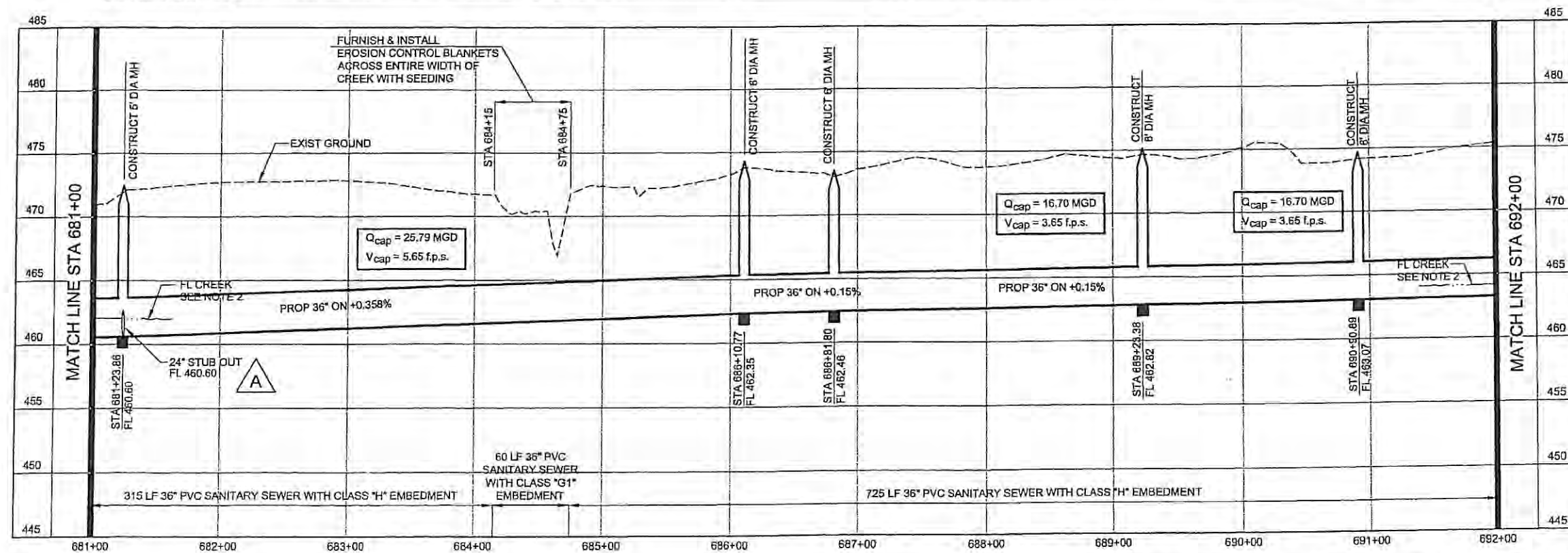


HORIZONTAL CONTROL DATA			
COORDINATES			
MH STATION	NORTH	EAST	DELTA
681+23.86	7003870.01	2595569.31	00° 21' 45" LT
686+10.77	7004345.77	2595465.73	69° 17' 33" LT
686+81.80	7004356.18	2595395.47	55° 19' 52" RT
689+23.38	7004572.86	2595288.65	49° 58' 41" RT
690+90.89	7004726.20	2595356.07	61° 16' 35" LT

SURVEY CONTROL			
COORDINATES			
POINT NO	NORTH	EAST	ELEVATION
530	7004431.23	2595392.43	475.41
532	7003950.93	2595599.14	472.04
1326	7004245.25	2595472.46	472.26

NOTES:

- SEE SHEET NO. 2 FOR GENERAL PROJECT NOTES.
- FLOW LINE AT BUFFALO CREEK SHOWN FOR REFERENCE ONLY.
- ACCESS TO THE GOLF COURSE MAINTENANCE BUILDING SHALL BE MAINTAINED DURING CONSTRUCTION. EXISTING PAVING, DRIVES AND CART PATHS DAMAGED OR REMOVED BY THE CONSTRUCTION SHALL BE RESTORED TO EQUAL OR BETTER THAN THEIR PRE-CONSTRUCTION CONDITION.
- CONTRACTOR SHALL INSTALL EROSION CONTROL SILT FENCING ON BOTH SIDES OF THE EASEMENT ACROSS THE GOLF COURSE PRIOR TO STARTING CONSTRUCTION ACTIVITIES.
- CONTRACTOR MAY ONLY CONSTRUCT THE PROPOSED SANITARY SEWER FACILITIES ON B.C. GOLF LIMITED PROPERTY DURING THE MONTHS OF JANUARY AND FEBRUARY. ALL CONSTRUCTION AND RESTORATION ACTIVITY FOR THE WHOLE LENGTH OF THE PROPOSED SEWER THROUGH THE GOLF COURSE PROPERTY MUST BE STARTED AND TOTALLY COMPLETED IN THAT SINGLE TWO MONTH TIME FRAME.
- THE CONTRACTOR SHALL REPLACE ALL GRASS DISTURBED BY THE CONSTRUCTION ON B.C. GOLF LIMITED PROPERTY WITH GRASS SOD APPROVED BY B.C. GOLF LIMITED.



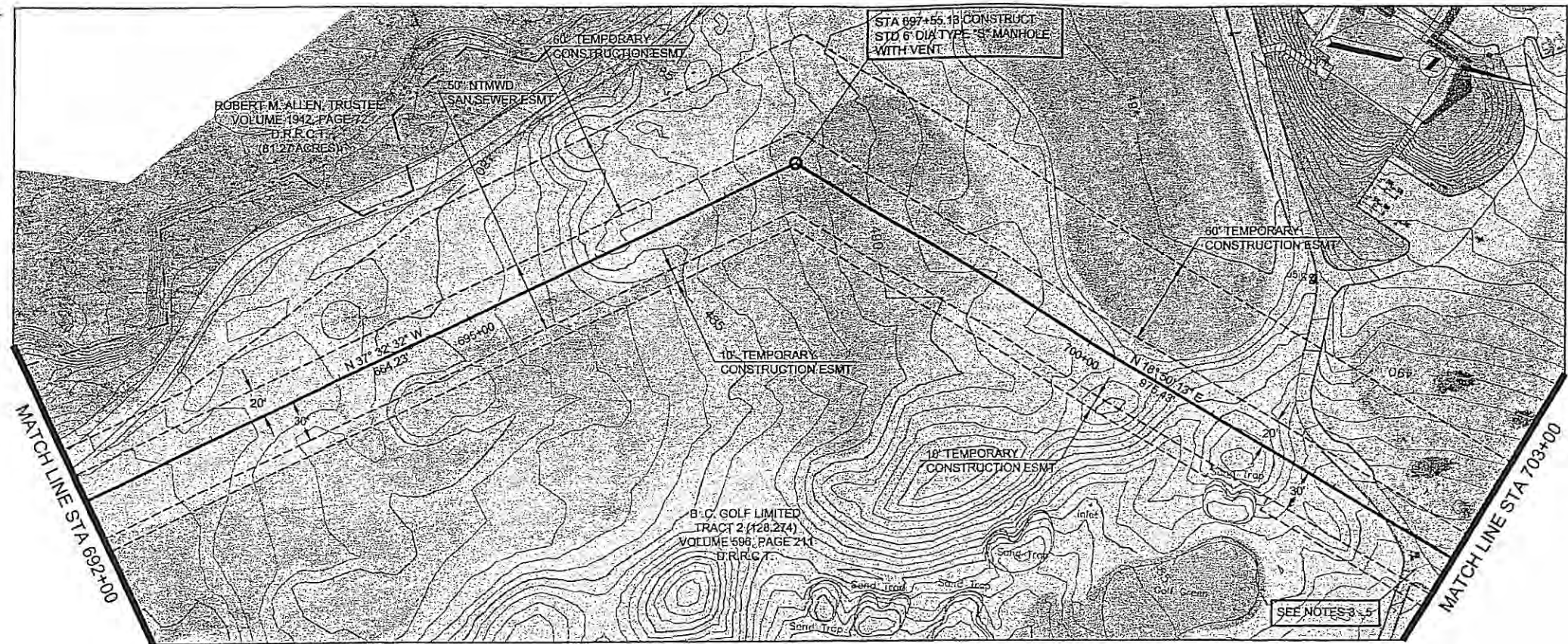
**NORTH TEXAS MUNICIPAL
WATER DISTRICT**
ROCKWALL-HEATH
TRANSFER SEWER
RHC# 01-1, SECTION 2
SANITARY SEWER
PLAN AND PROFILE
681+00 TO 692+00

KBR

Kellogg Brown & Root, Inc.
Engineered by KBR Technical Services, Inc.

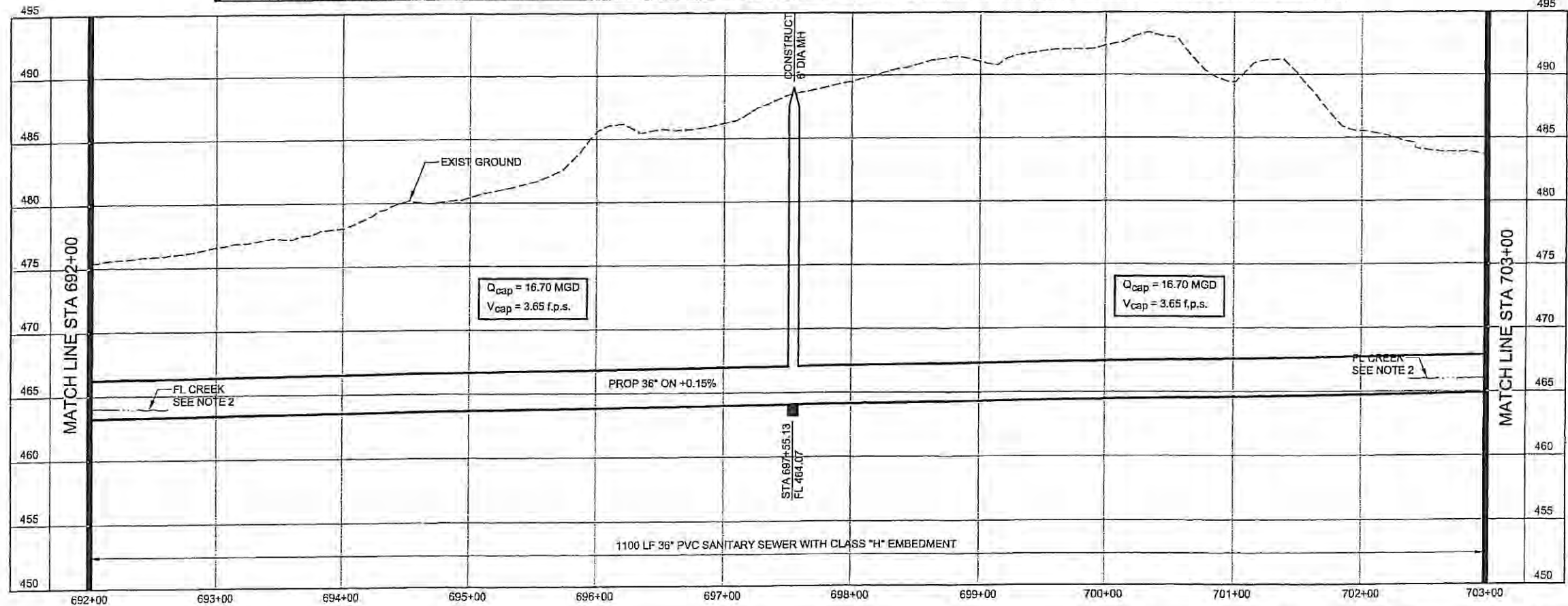
DESIGNED	KBR	HORIZ. SCALE	1"=50'
DRAWN	KBR	VERT. SCALE	1"=5'
CHECKED	THG	DATE	SEPTEMBER 26, 2003
NO.	DATE	REVISIONS	MADE BY
CM-0148			





HORIZONTAL CONTROL DATA			
COORDINATES			
MH STATION	NORTH	EAST	DELTA
697+55.13	7005252.08	2594951.32	56° 22' 45" RT

SURVEY CONTROL			
COORDINATES			
POINT NO	NORTH	EAST	ELEVATION
NONE			



NOTES:

- SEE SHEET NO. 2 FOR GENERAL PROJECT NOTES.
- FLOW LINE AT BUFFALO CREEK SHOWN FOR REFERENCE ONLY.
- ACCESS TO THE GOLF COURSE MAINTENANCE BUILDING SHALL BE MAINTAINED DURING CONSTRUCTION. EXISTING PAVING, DRIVES AND CART PATHS DAMAGED OR REMOVED BY THE CONSTRUCTION SHALL BE RESTORED TO EQUAL OR BETTER THAN THEIR PRE-CONSTRUCTION CONDITION.
- CONTRACTOR SHALL INSTALL EROSION CONTROL SILT FENCING ON BOTH SIDES OF THE EASEMENT ACROSS THE GOLF COURSE PRIOR TO STARTING CONSTRUCTION ACTIVITIES.
- CONTRACTOR MAY ONLY CONSTRUCT THE PROPOSED SANITARY SEWER FACILITIES ON B.C. GOLF LIMITED PROPERTY DURING THE MONTHS OF JANUARY AND FEBRUARY. ALL CONSTRUCTION AND RESTORATION ACTIVITY FOR THE WHOLE LENGTH OF THE PROPOSED SEWER THROUGH THE GOLF COURSE PROPERTY MUST BE STARTED AND TOTALLY COMPLETED IN THAT SINGLE TWO MONTH TIME FRAME.
- THE CONTRACTOR SHALL REPLACE ALL GRASS DISTURBED BY THE CONSTRUCTION ON B.C. GOLF LIMITED PROPERTY WITH GRASS SOD APPROVED BY B.C. GOLF LIMITED.

**NORTH TEXAS MUNICIPAL
WATER DISTRICT**
ROCKWALL-HEATH
TRANSFER SEWER
RHC# 01-1, SECTION 2
SANITARY SEWER
PLAN AND PROFILE
692+00 TO 703+00

KBR

Kellogg Brown & Root, Inc.
Engineered by KBR Technical Services, Inc.

DESIGNED	KBR	HORIZ. SCALE	1"=50'
DRAWN	KBR	VERT. SCALE	1"=5'
CHECKED	THG	DATE	SEPTEMBER 26, 2003
MADE/CKD		JOB NO.	C.M.-0148
		DWG. NO.	22 OF 36



1/2/03 NO DATE

REVISIONS

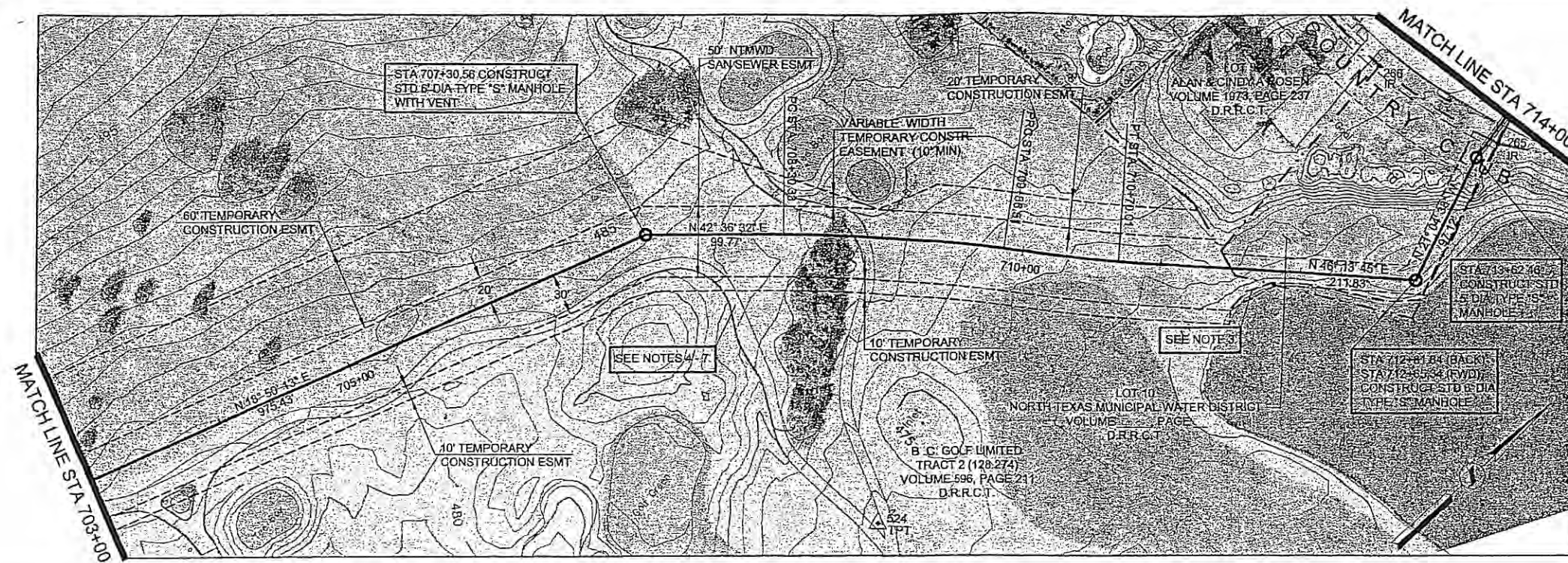
MADE/CKD

JOB NO.

C.M.-0148

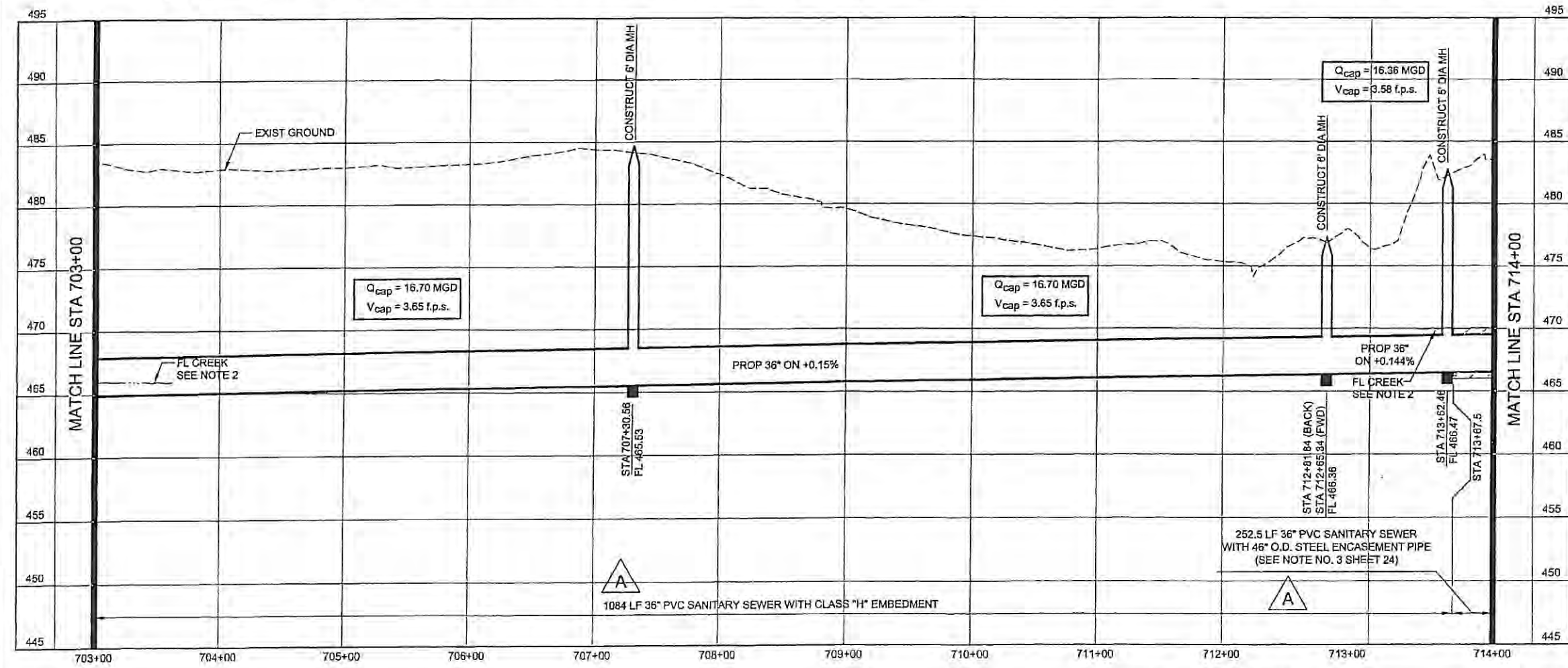
DWG. NO.

22 OF 36



HORIZONTAL CONTROL DATA			
COORDINATES			
MH STATION	NORTH	EAST	DELTA
707+30.56	7006176.07	2595266.27	23° 46' 19" RT
712+81.84	7006558.99	2595662.32	67° 18' 22" LT
713+62.46	7006649.61	2595627.40	10° 36' 32" RT

SURVEY CONTROL			
COORDINATES			
POINT NO	NORTH	EAST	ELEVATION
524	7006159.52	2595532.00	476.82
265 (IR)	7006668.07	2595631.21	482.88
266 (IR)	7006642.12	2595532.33	484.60



- NOTES:**
- SEE SHEET NO. 2 FOR GENERAL PROJECT NOTES.
 - FLOW LINE AT BUFFALO CREEK SHOWN FOR REFERENCE ONLY.
 - CONTRACTOR SHALL INSTALL EROSION CONTROL SILT FENCING PRIOR TO CONSTRUCTION AND SHALL BE RESPONSIBLE FOR PREVENTING CONSTRUCTION ACTIVITIES FROM DISTURBING POND.
 - CART PATHS DAMAGED OR REMOVED BY THE CONSTRUCTION SHALL BE RESTORED TO EQUAL OR BETTER THAN THEIR PRE-CONSTRUCTION CONDITION.
 - CONTRACTOR SHALL INSTALL EROSION CONTROL SILT FENCING ON BOTH SIDES OF THE EASEMENT ACROSS THE GOLF COURSE PRIOR TO STARTING CONSTRUCTION ACTIVITIES.
 - CONTRACTOR MAY ONLY CONSTRUCT THE PROPOSED SANITARY SEWER FACILITIES ON B.C. GOLF LIMITED PROPERTY DURING THE MONTHS OF JANUARY AND FEBRUARY. ALL CONSTRUCTION AND RESTORATION ACTIVITY FOR THE WHOLE LENGTH OF THE PROPOSED SEWER THROUGH THE GOLF COURSE PROPERTY MUST BE STARTED AND TOTALLY COMPLETED IN THAT SINGLE TWO MONTH TIME FRAME.
 - THE CONTRACTOR SHALL REPLACE ALL GRASS DISTURBED BY THE CONSTRUCTION ON B.C. GOLF LIMITED PROPERTY WITH GRASS SOD APPROVED BY B.C. GOLF LIMITED.



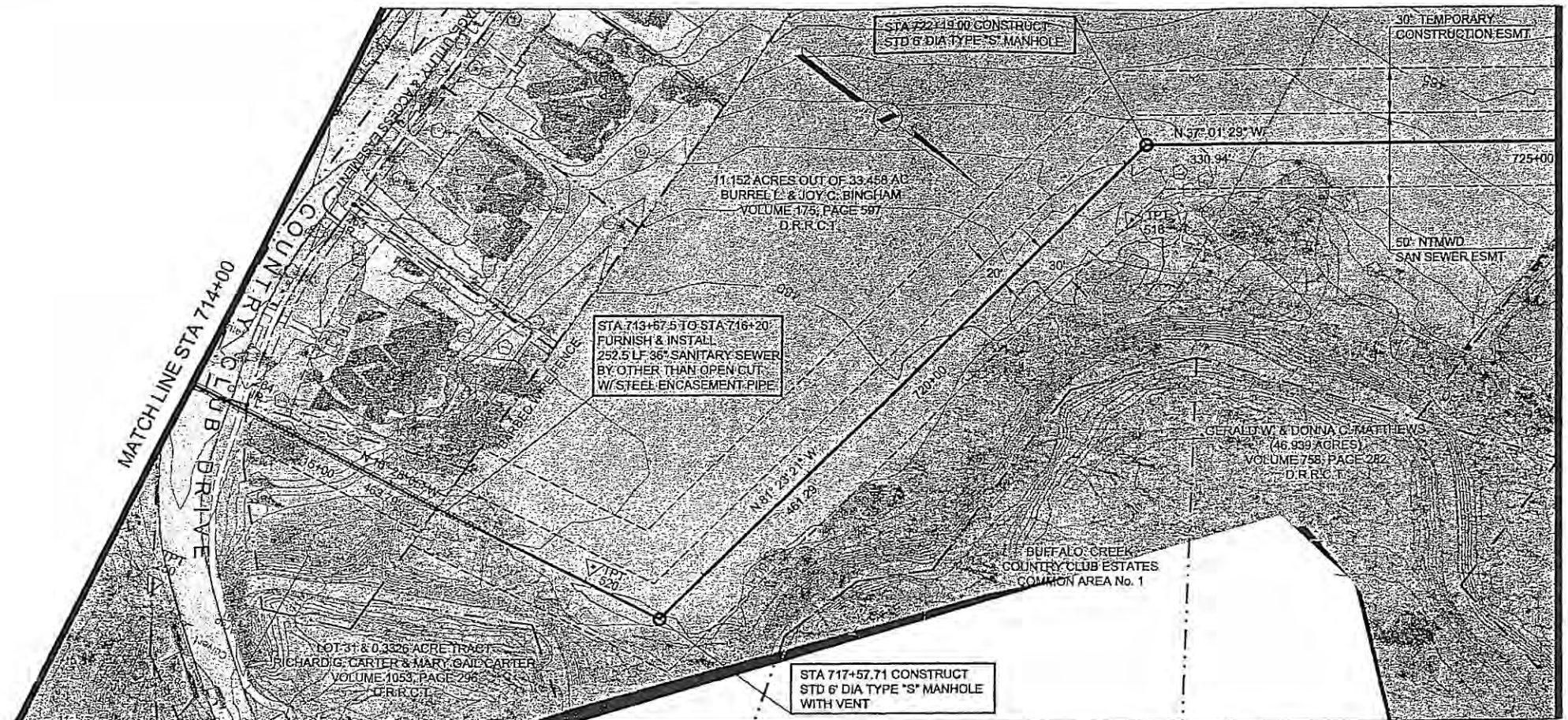
**NORTH TEXAS MUNICIPAL
WATER DISTRICT**
ROCKWALL-HEATH
TRANSFER SEWER
RHCf 01-1, SECTION 2
SANITARY SEWER
PLAN AND PROFILE
703+00 TO 714+00

KBR
Kellogg Brown & Root, Inc.
Engineered by KBR Technical Services, Inc.

DESIGNED	KBR	HORIZ. SCALE	1"=50'
DRAWN	KBR	VERT. SCALE	1"=5'
CHECKED	THG	DATE	SEPTEMBER 26, 2003

NO.	DATE	REVISIONS	MADE/CKD	JOB NO.	C/M-0148	DWG. NO.	23 OF 36
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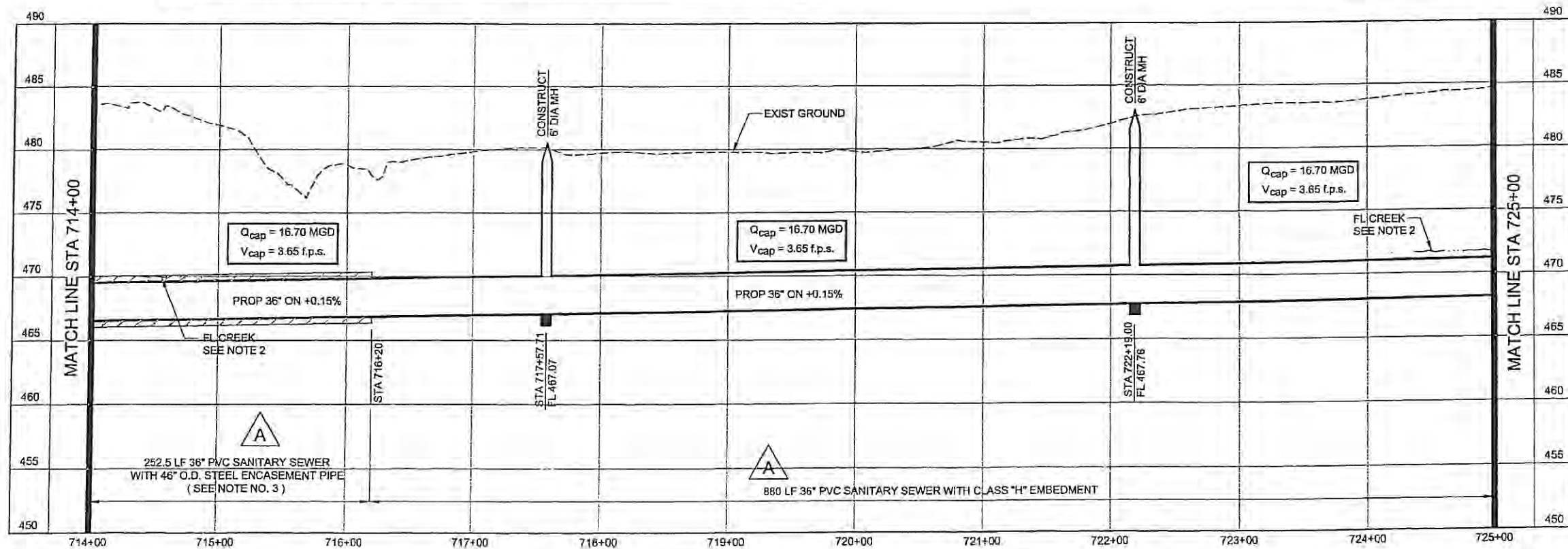


HORIZONTAL CONTROL DATA			
COORDINATES			
MH STATION	NORTH	EAST	DELTA
717+57.71	7007038.28	2595555.58	70° 55' 16" LT
722+19.00	7007107.34	2595099.49	44° 21' 52" RT

SURVEY CONTROL			
COORDINATES			
POINT NO	NORTH	EAST	ELEVATION
250	7006748.72	2595743.50	481.18
263 (IR)	7006699.63	2595458.41	485.43
264 (IR)	7006724.37	2595609.30	483.76
518	7007130.27	2595145.78	481.35
520	7006980.26	2595554.29	479.38

NOTES:

- SEE SHEET NO. 2 FOR GENERAL PROJECT NOTES.
- FLOW LINE AT BUFFALO CREEK SHOWN FOR REFERENCE ONLY.
- MINIMUM WALL THICKNESS FOR THE STEEL ENCASUREMENT PIPE SHALL BE 5/8".



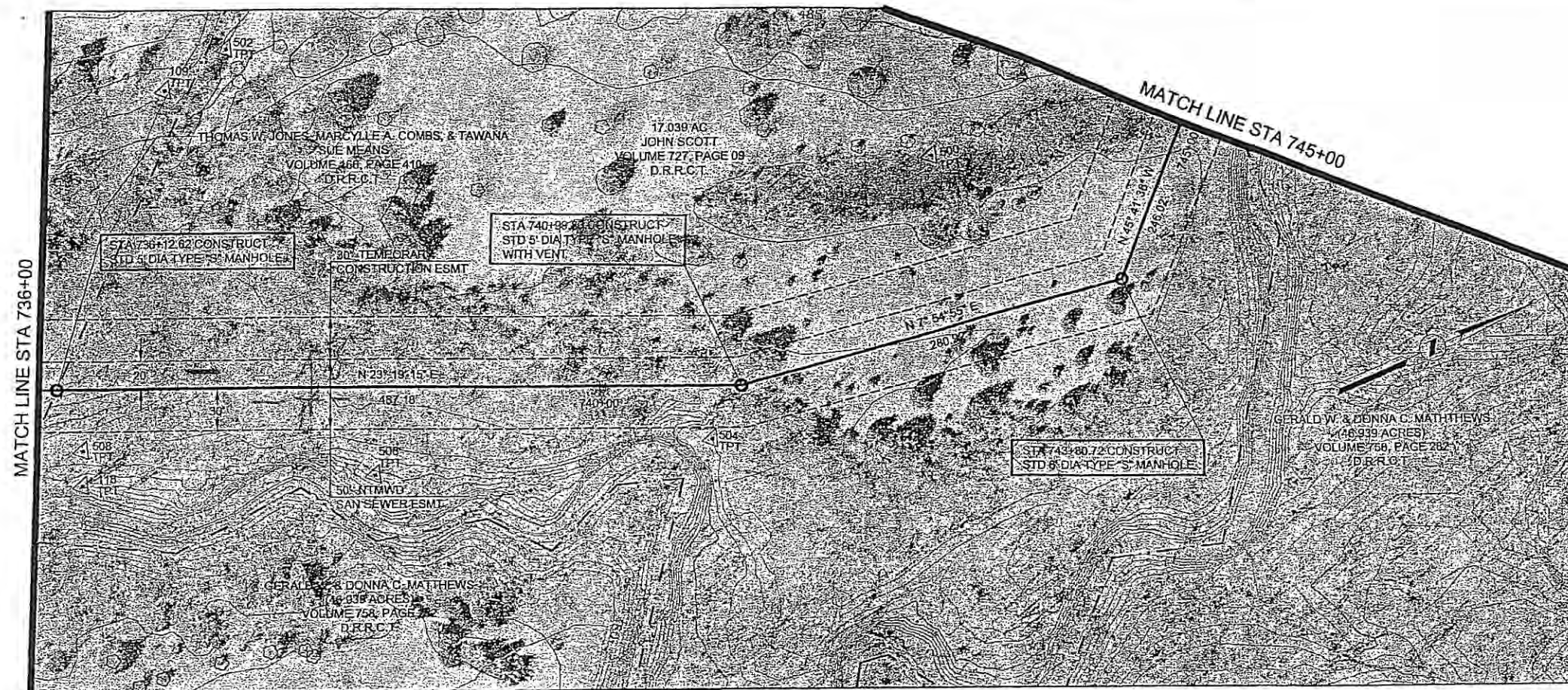
**NORTH TEXAS MUNICIPAL
WATER DISTRICT**
ROCKWALL-HEATH
TRANSFER SEWER
RHC# 01-1, SECTION 2
SANITARY SEWER
PLAN AND PROFILE
714+00 TO 725+00

KBR
Kilgus Brown & Root, Inc.
Engineered by KBR Technical Services, Inc.

DESIGNED KBR HORIZ. SCALE 1"=50'
DRAWN KBR VERT. SCALE 1"=5'
CHECKED THG DATE SEPTEMBER 26, 2003
JOB NO. CM-0148 DWG. NO. 24 OF 36



NO.	DATE	REVISIONS	MADE BY	CHECKED BY
A	11/6/03	Added 24" diameter subout in profile for MH at Sta 681+23.86.	THG	THG
A	11/6/03	Added encasement pipe size and wall thickness.	THG	THG

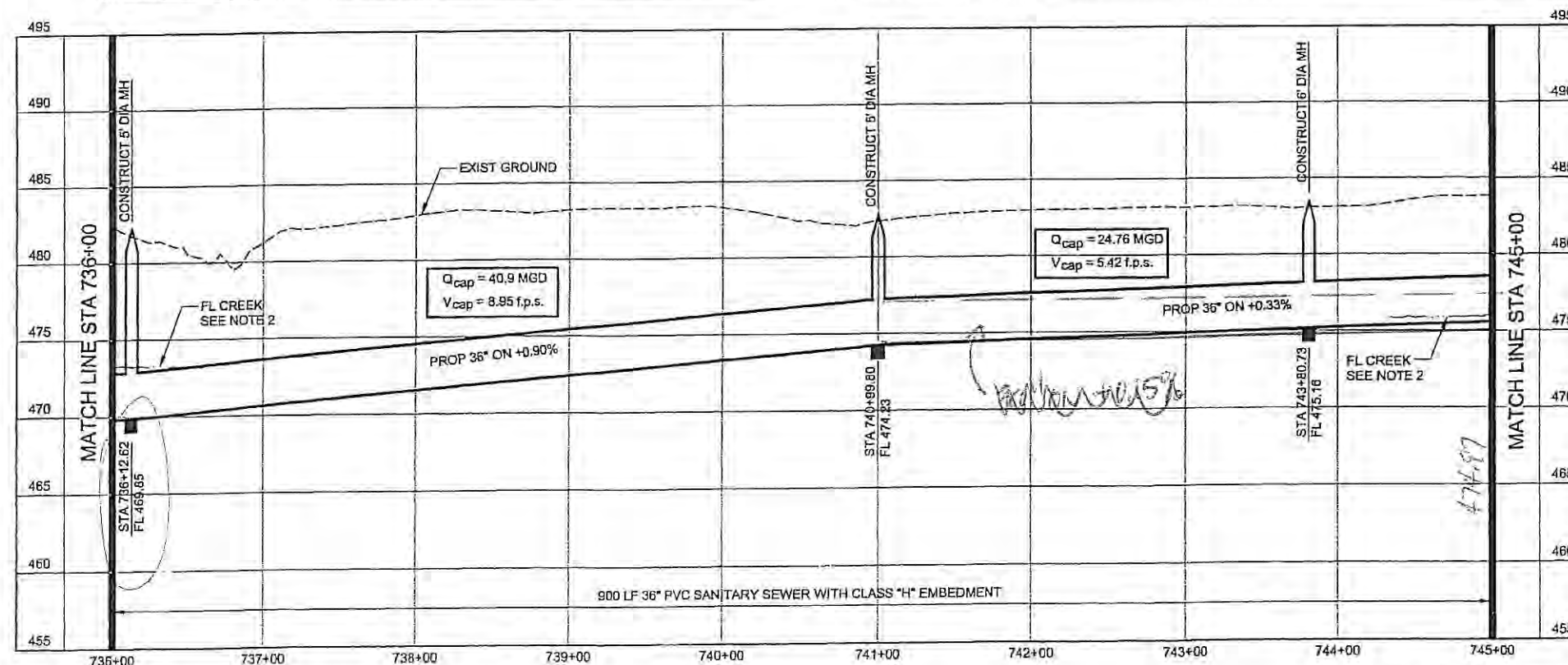


HORIZONTAL CONTROL DATA			
COORDINATES			
MH STATION	NORTH	EAST	DELTA
736+12.62	7008178.87	2595400.04	01° 27' 26" LT
740+99.80	7008626.25	2595592.90	15° 24' 20" LT
743+80.72	7008904.49	2595631.59	53° 36' 31" LT

SURVEY CONTROL			
COORDINATES			
POINT NO	NORTH	EAST	ELEVATION
109	7008333.59	2595237.28	486.39
118	7008169.16	2595470.66	478.59
500	7008813.74	2595496.72	483.46
502	7008385.11	2595227.84	485.92
504	7008592.10	2595619.60	482.01
506	7008363.03	2595547.91	479.50
508	7008179.12	2595447.56	481.48

NOTES:

- SEE SHEET NO. 2 FOR GENERAL PROJECT NOTES.
- FLOW LINE AT BUFFALO CREEK SHOWN FOR REFERENCE ONLY.




NORTH TEXAS MUNICIPAL WATER DISTRICT
 ROCKWALL-HEATH
 TRANSFER SEWER
 RHCf 01-1, SECTION 2
 SANITARY SEWER
 PLAN AND PROFILE
 736+00 TO 745+00

KBR			
Kellogg Brown & Root, Inc.			
Engineered by KBR Technical Services, Inc.			
DESIGNED	KBR	HORIZ. SCALE	1"=50'
DRAWN	KBR	VERT. SCALE	1"=5'
CHECKED	THG	DATE	SEPTEMBER 26, 2003
NO	DATE	REVISIONS	MADE OKD
JOB NO.	CM-0148	DWG. NO.	26 OF 36



HORIZONTAL CONTROL DATA			
COORDINATES			
MH STATION	NORTH	EAST	DELTA
746+26.74	7009076.34	2595455.53	70° 47' 20" RT
748+69.75	7009296.41	2595558.60	58° 50' 24" LT
751+53.75	7009532.56	2595400.84	29° 57' 15" RT
752+19.41	7009598.08	2595396.50	29° 28' 43" RT
754+20.39	7009779.19	2595483.63	67° 35' 00" RT
754+60.00	7009776.93	2595523.17	00° 00' 00"
755+16.76	7009775.69	2595579.94	-

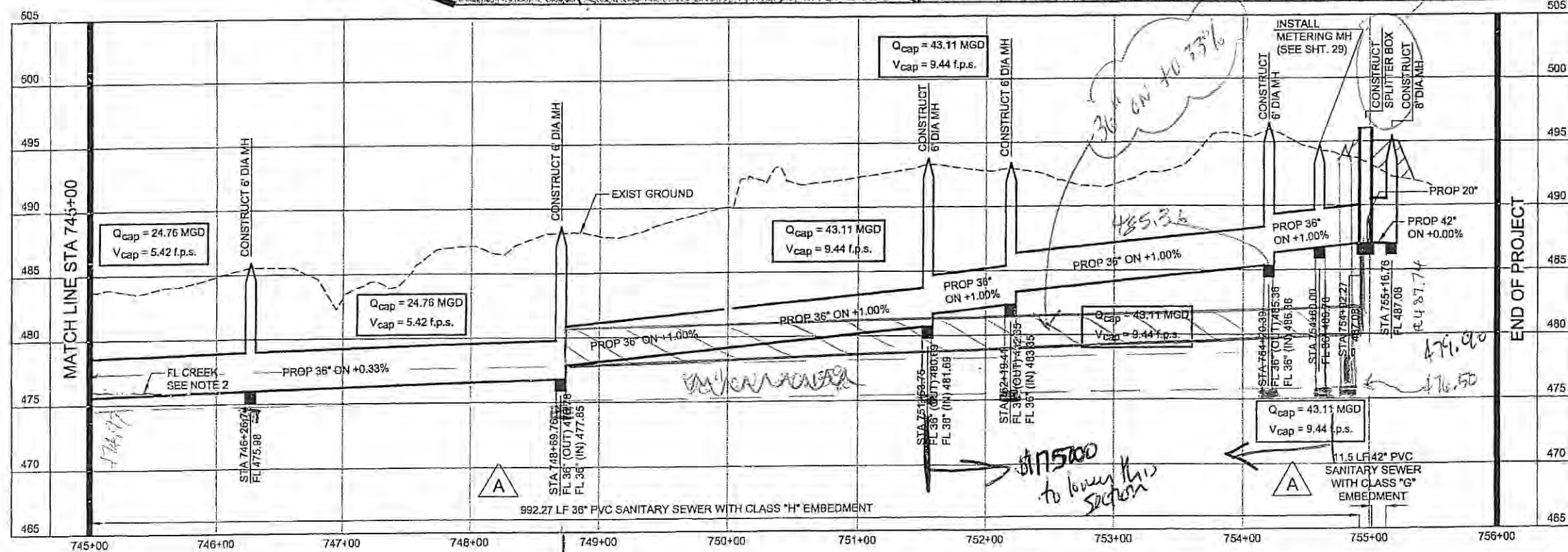
SURVEY CONTROL			
COORDINATES			
POINT NO	NORTH	EAST	ELEVATION
38	7009768.62	2595600.14	491.82
83	7009182.08	2595544.83	484.53
89 (IR)	7009713.57	2595572.82	491.23
90 (IR)	7009750.73	2595536.16	492.75
96 (IR)	7009824.75	2595563.12	494.68
138 (IR)	7009165.02	2595550.35	482.31

*NEW ROCKWALL
SEWER*

END OF PROJECT

*FL IN = 487.10
PROP. FL OUT (Rising sewer) = 479.90
(still need some creek)*

- NOTES:**
- SEE SHEET NO. 2 FOR GENERAL PROJECT NOTES.
 - FLOW LINE AT BUFFALO CREEK SHOWN FOR REFERENCE ONLY.



END OF PROJECT

**NORTH TEXAS MUNICIPAL
WATER DISTRICT**

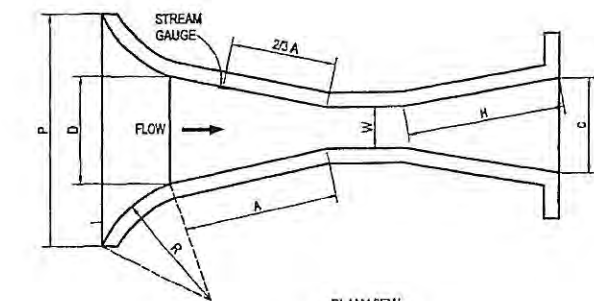
**ROCKWALL-HEATH
TRANSFER SEWER
RHC# 01-1, SECTION 2**

**SANITARY SEWER
PLAN AND PROFILE
745+00 TO END**

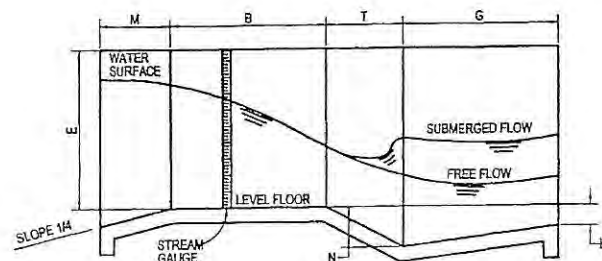
KBR
Kullogg Brown & Root, Inc.
Engineered by KBR Technical Services, Inc.

DESIGNED	KBR	HORIZ. SCALE	1"=50'
DRAWN	KBR	VERT. SCALE	1"=5'
CHECKED	THG	DATE	SEPTEMBER 26, 2003
NO.	DATE	REVISIONS	MADE/CKD
JOB NO.		CM-0148	DWG. NO.
			27 OF 36





PLAN VIEW

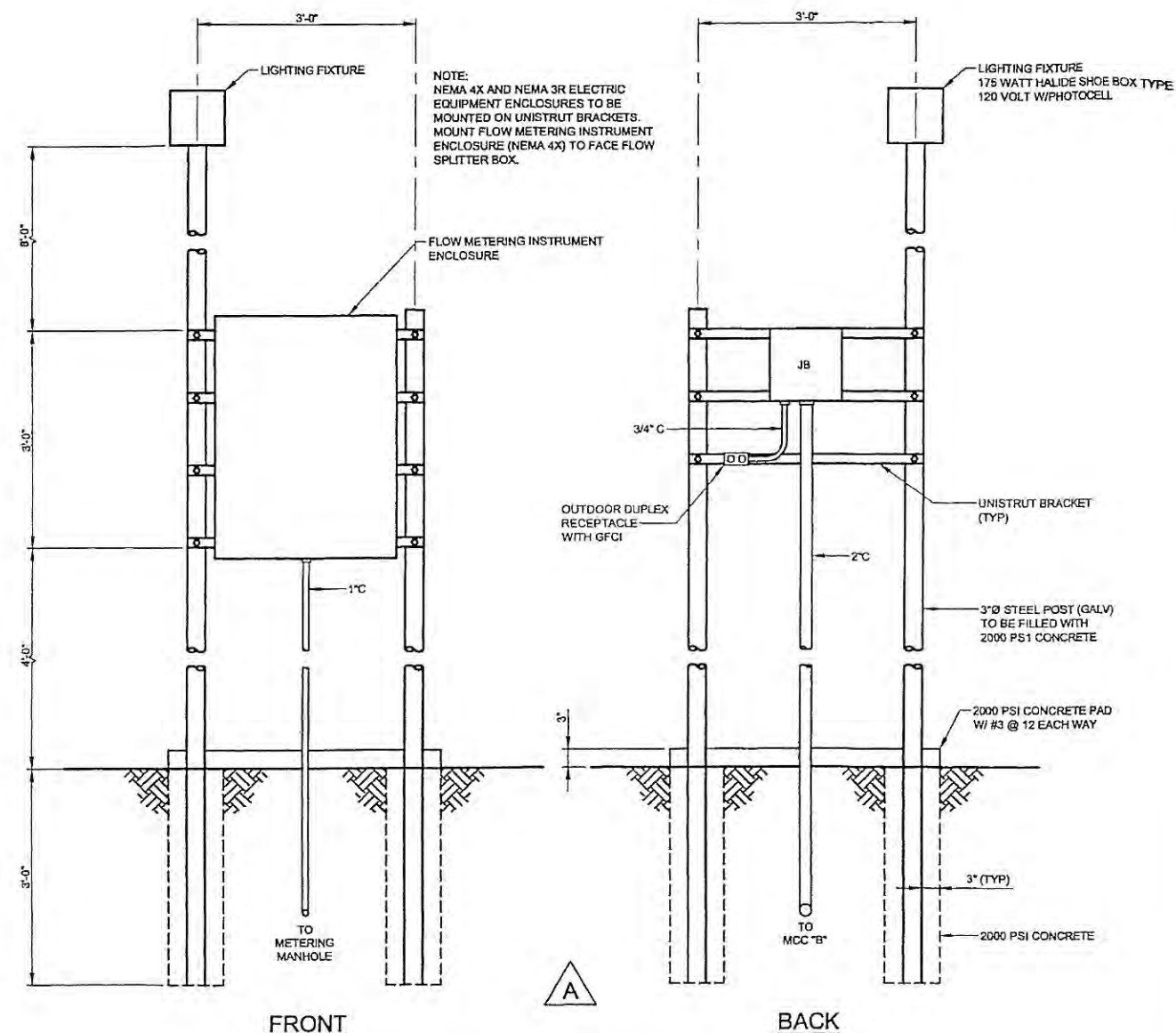


PROFILE

PARSHALL FLUME TABLE OF DIMENSIONS

W		A		2/3 A		B		C		D		E		T		G		H		K		M		N		P		R		X		Y	
FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.
	1	1	2 9/32		9 17/32	1	2		3 19/32		6 19/32	9		3	8		9 3/4"	3/4						1 1/8						5/16		1/2	
	2	1	4 5/16		10 7/8	1	4		5 5/16		8 13/32	9		4 1/2	10		9 7/8"	7/8					1 11/16						5/8		1		
	3	1	6 3/8	1	1/4	1	6		7		10 3/16	2		6	1		2	1		1			2 1/4						1		1 1/2		
	6	2	7 1/16	1	4 5/16	2		1	3 1/2	1	3 5/8	2		1	2		2	3		3	1		4 1/2	2	11 1/2	1	4		2		3		
	9	2	10 5/8	1	11 1/8	2	10	1	3	1	10 5/8	2	6	1		1	6	2	9		3	1		4 1/2	3	6 1/2	1	4		2		3	
1		4	6	3		4	4 7/8	2		2	9 1/4	3	2		3		3	3		3	1	3		9	4	10 3/4	1	8		2		3	
1	6	4	9	3	2	4	7 7/8	2	6	3	4 3/8	3	2		3		3	3		3	1	3		9	5	6	1	8		2		3	
2		5		3	4	4	10 7/8	3		3	11 1/2	3	2		3		3	3		3	1	3		9	5	1	1	8		2		3	
3		5	6	3	8	5	4 3/4	4		5	1 7/8	3	2		3					3	1	3		9	7	3 1/2	1	8		2		3	
4		6		4		5	10 5/8	5		8	4 1/4	3	2		3					3	1	6		9	8	10 3/4	2			2		3	

*FLUME SIZE REQUIRED FOR THIS PROJECT AT STATION 750+00



FRONT

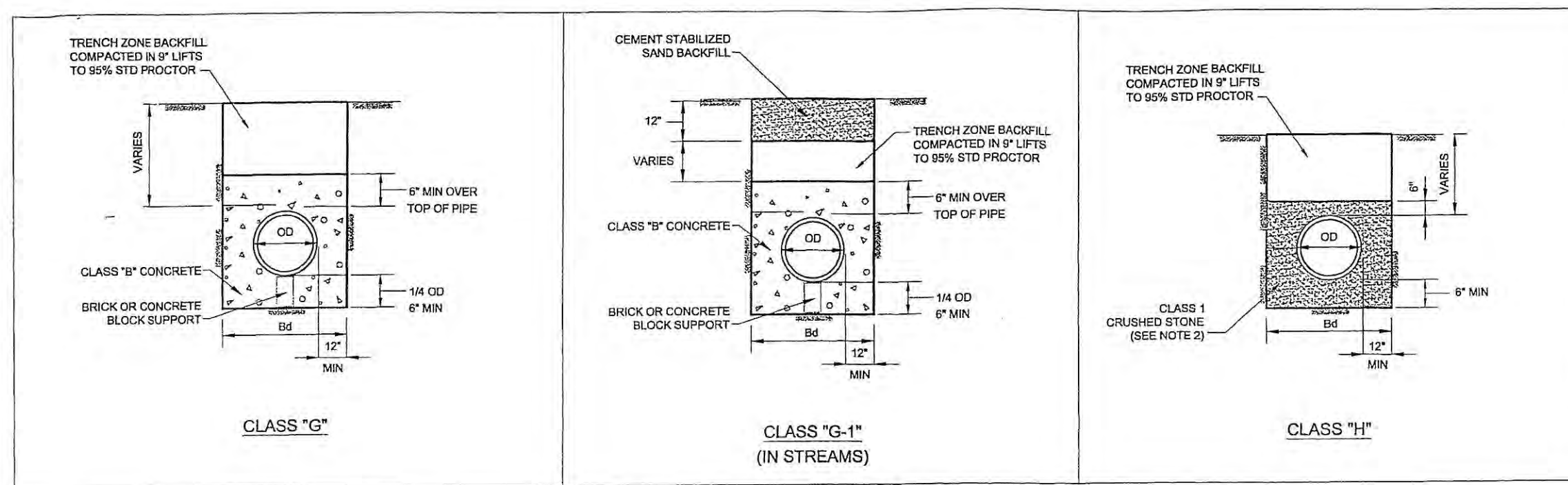
BACK

FLOW METERING INSTRUMENTATION AND ELECTRICAL EQUIPMENT SUPPORT STRUCTURE



NO	DATE	REVISIONS	MADE	CHKD
1	11/4/03	Revised elect. service and equip. mounting details.	LC	THG
2				
3				
4				

NORTH TEXAS MUNICIPAL WATER DISTRICT ROCKWALL-HEATH TRANSFER SEWER RHCf 01-1, SECTION 2 SANITARY SEWER DETAILS METERING MANHOLE DETAILS (SHT 2 OF 2)			
KBR Kallag Brown & Root, Inc. Engineered by KBR Technical Services, Inc.			
DESIGNED	KBR	HORIZ. SCALE	AS SHOWN
DRAWN	KBR	VERT. SCALE	AS SHOWN
CHECKED	THG	DATE	SEPTEMBER 26, 2003
JOB NO.	CM-0148	DWG. NO.	30 OF 36

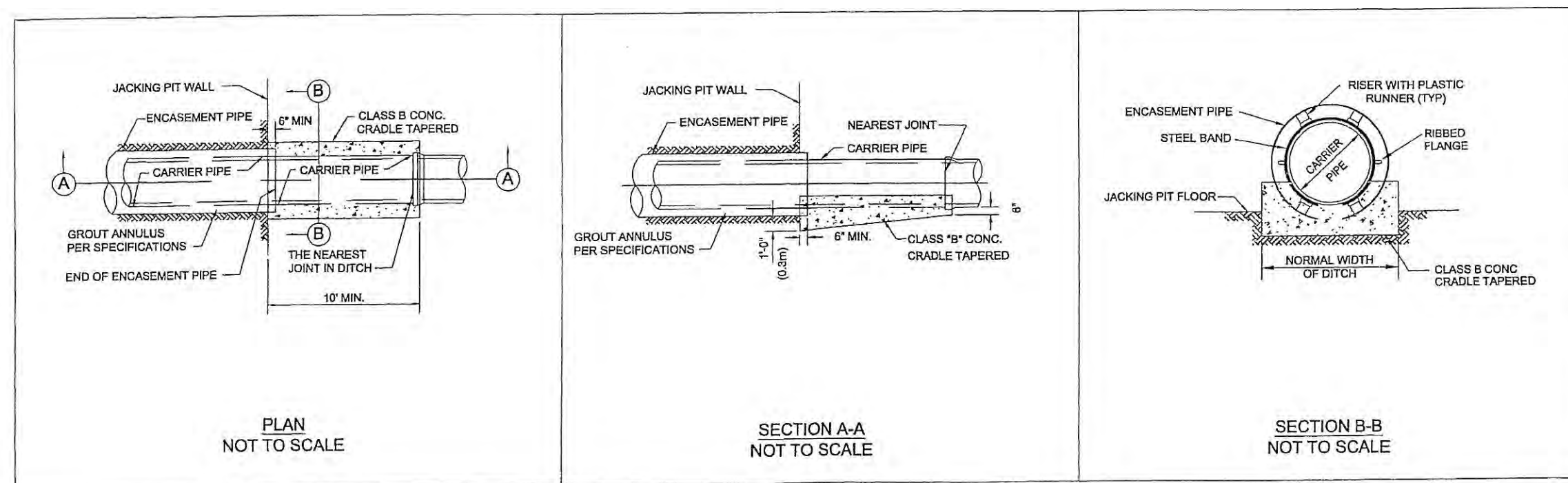


EMBEDMENT NOTES:

1. Bd IS TRENCH WIDTH
2. CLASS 1 CRUSHED STONE EMBEDMENT GRADATIONS

RETAINED ON 1 1/2-INCH SIEVE	0%
RETAINED ON 1 INCH SIEVE	0 - 5%
RETAINED ON 1/2 INCH SIEVE	40 - 75%
RETAINED ON NO. 4 SIEVE	90 - 100%
RETAINED ON NO. 8 SIEVE	95 - 100%
3. TRENCH ZONE BACKFILL SHALL BE NATIVE SOIL MATERIAL PRODUCED BY THE TRENCH EXCAVATION.

PIPE EMBEDMENT DETAILS NOT TO SCALE



ENCASEMENT NOTES:

1. CONTRACTOR SHALL PROVIDE ADEQUATE SUPPORT FOR CARRIER PIPE TO ENSURE MIN. 1.5" CLEARANCE BETWEEN PIPE BELL AND ENCASEMENT PIPE.
2. CONTRACTOR SHALL FURNISH & INSTALL A MINIMUM OF 3 CASING SPACERS PER JOINT OF PIPE. CASING SPACERS SHALL BE INSTALLED ACCORDING TO MANUFACTURERS RECOMMENDATIONS. CASING SPACERS SHALL BE MODEL A12G-2, MANUFACTURED BY P.S.I. OR APPROVED EQUAL.

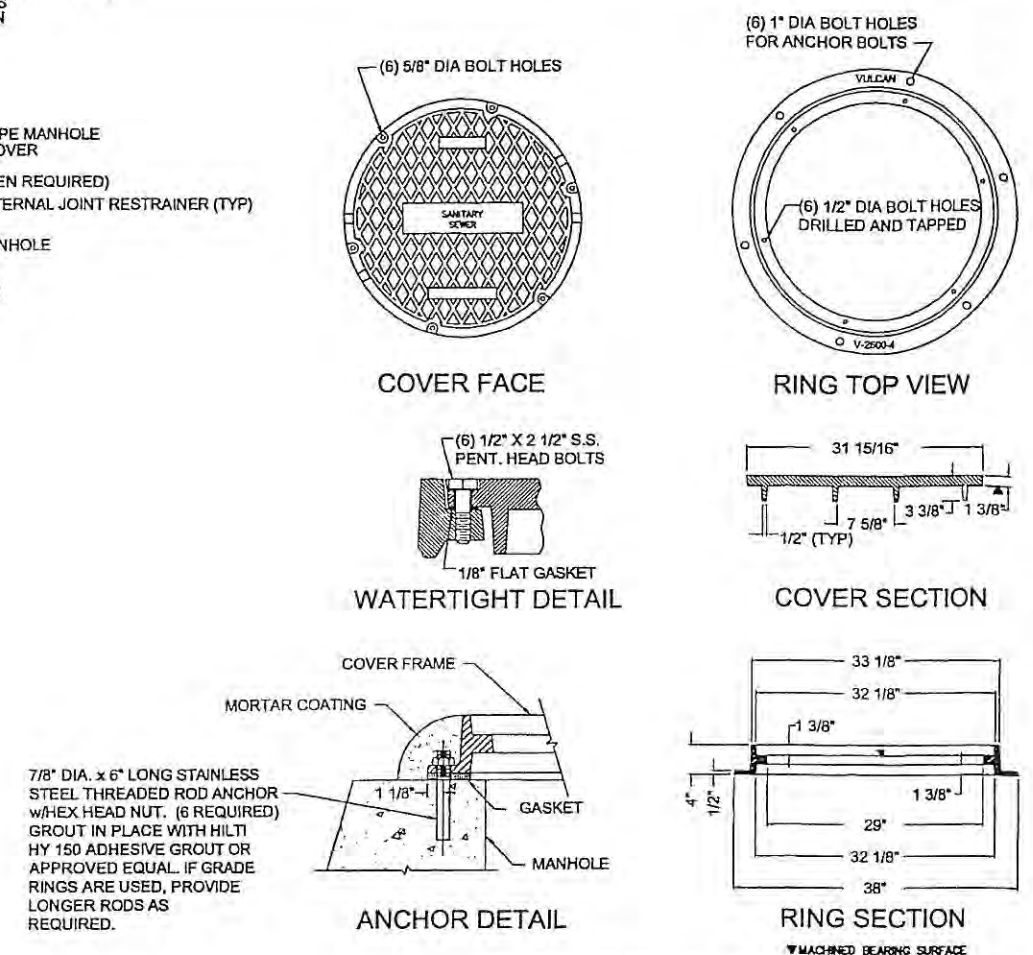
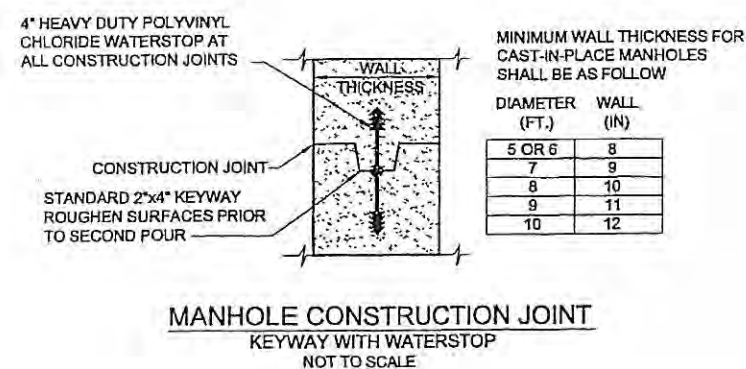
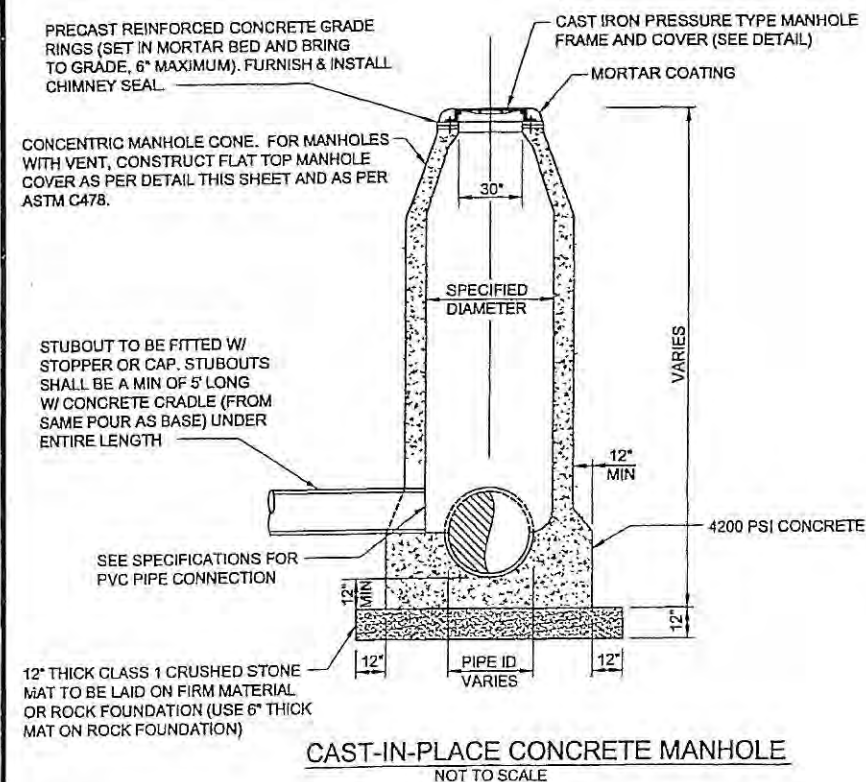
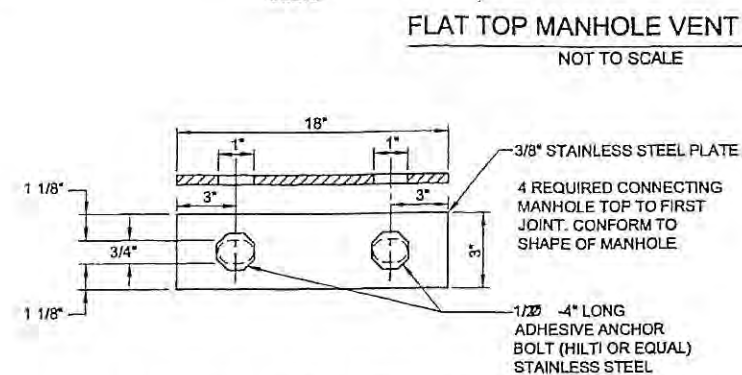
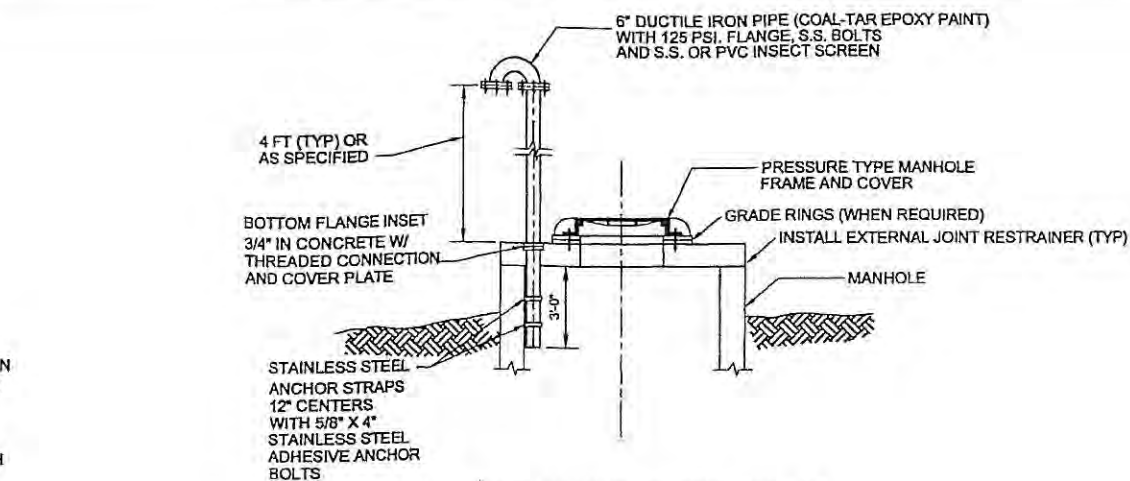
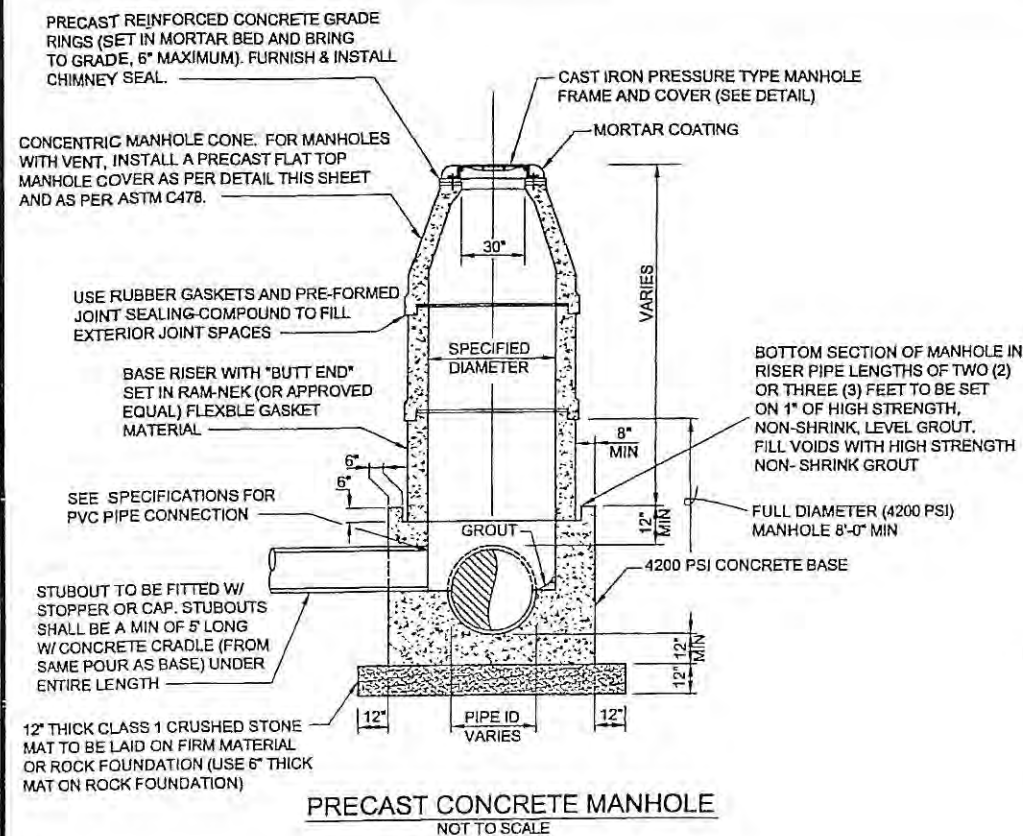
ENCASED ROAD AND RAILROAD BORE DETAILS



11/20/03

NO	DATE	REVISIONS	MADE	CKD

NORTH TEXAS MUNICIPAL WATER DISTRICT ROCKWALL-HEATH TRANSFER SEWER RHCF 01-1, SECTION 2 SANITARY SEWER DETAILS EMBEDMENT & ENCASEMENT DETAILS			
KBR Kellogg Brown & Root, Inc. Engineered by KBR Technical Services, Inc.			
DESIGNED	KBR	HORIZ. SCALE	AS SHOWN
DRAWN	KBR	VERT. SCALE	AS SHOWN
CHECKED	THG	DATE	SEPTEMBER 26, 2003
JOB NO.	CM-0148	DWG. NO.	31 OF 36

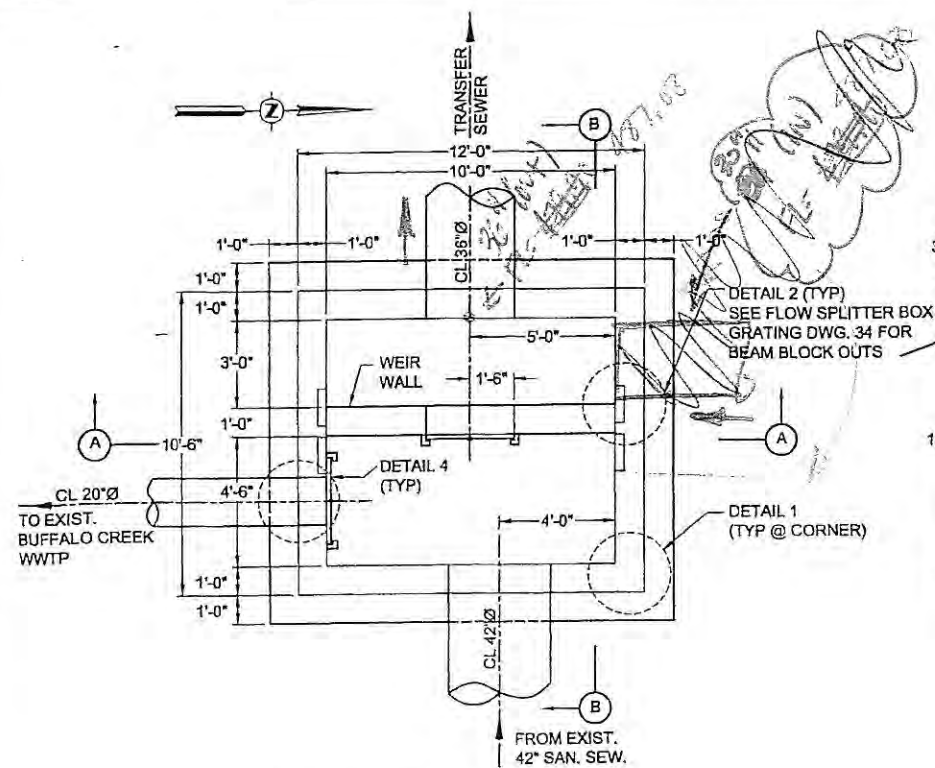


NOTES:

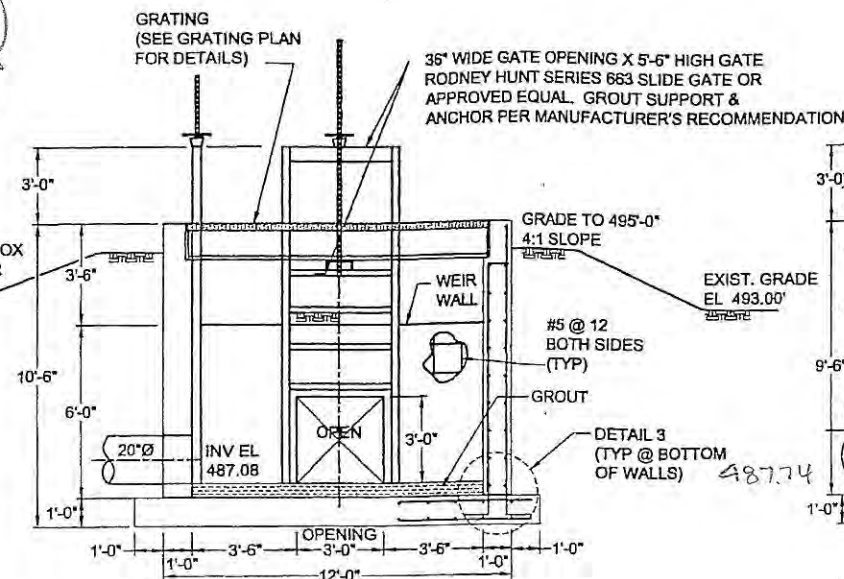
FOR PRECAST MANHOLES

1. PRECAST MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C-478 AND PROJECT SPECIFICATIONS.
2. EACH JOINT SHALL BE PROVIDED WITH AN O-RING DESIGN AND THE EXTERIOR OF EACH JOINT SHALL BE SEALED USING A PREFORMED JOINT SEALING COMPOUND.
3. USE PRESSURE TYPE MANHOLE FRAME AND COVER.
4. MANHOLE SHALL BE PLUMB TO WITHIN 1" FOR EVERY 5 FT OF VERTICAL DEPTH.

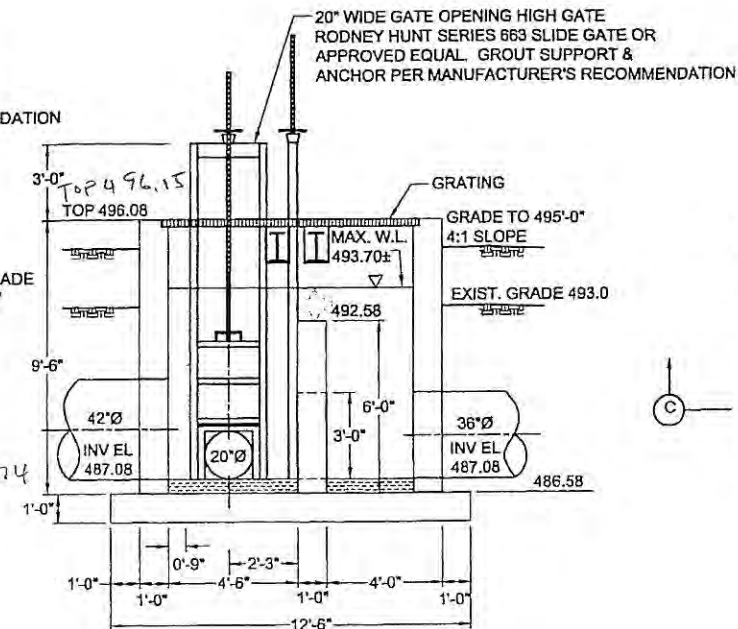
DIAMETER (FT.)	WALL (IN)
5 OR 6	8
7	9
8	10
9	11
10	12



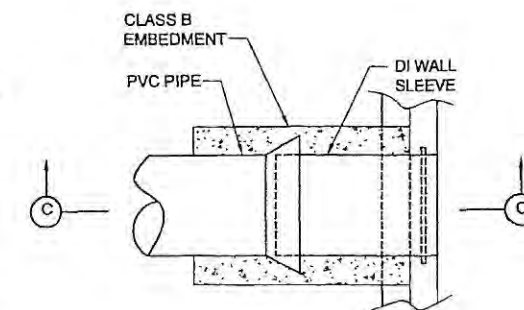
PLAN SPLITTER BOX DETAILS
NOT TO SCALE



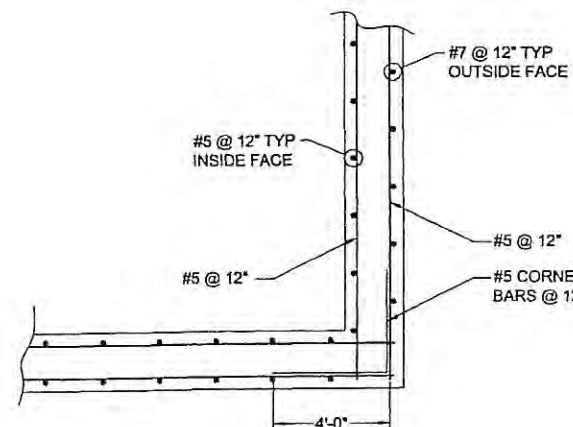
SECTION A-A
NOT TO SCALE



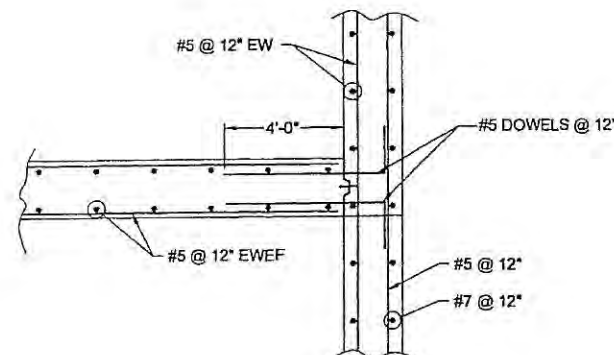
SECTION B-B
NOT TO SCALE



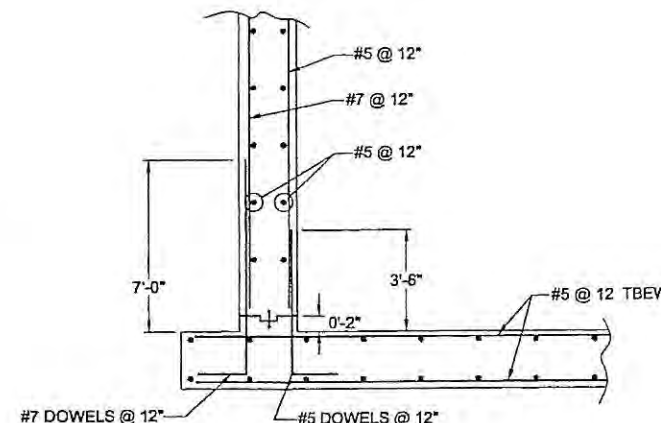
PLAN SPLITTER BOX
PIPE WALL CONNECTION
NOT TO SCALE



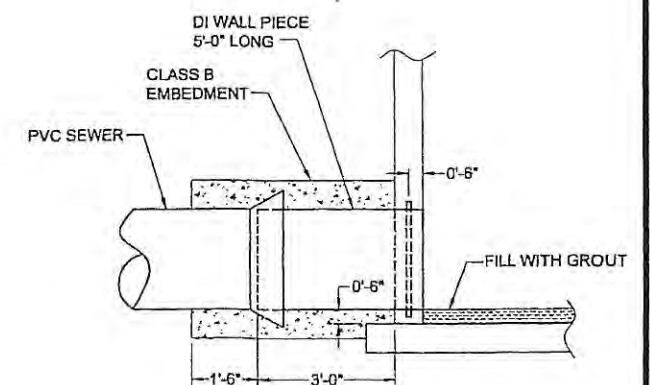
PLAN - REBAR DETAIL
NOT TO SCALE



PLAN - WEIR WALL DETAIL
NOT TO SCALE



ELEVATION - REBAR DETAIL
NOT TO SCALE



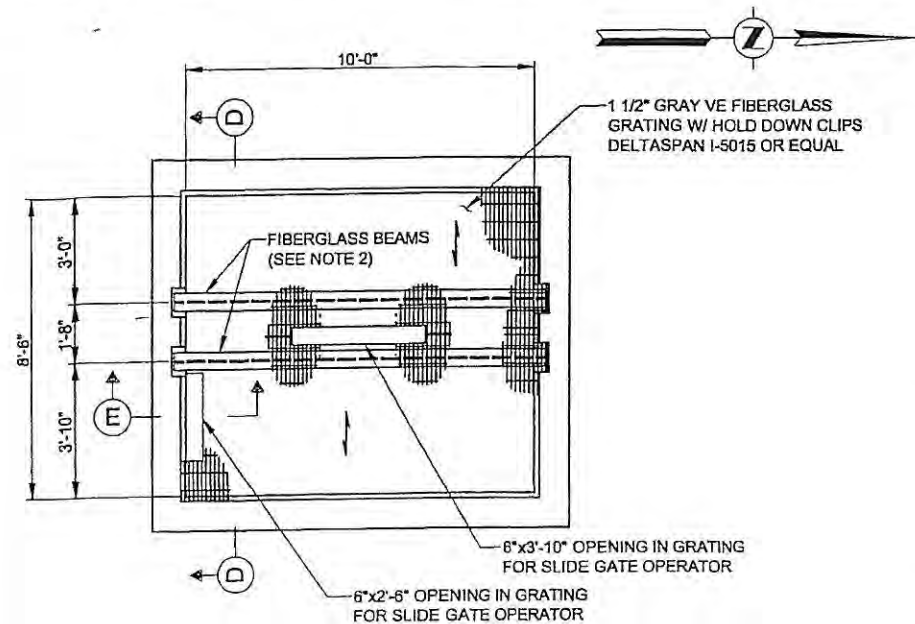
SECTION C-C
NOT TO SCALE

PROTECTIVE COATING FOR WETTED INTERIOR CONCRETE SURFACES OF SPLITTER BOX

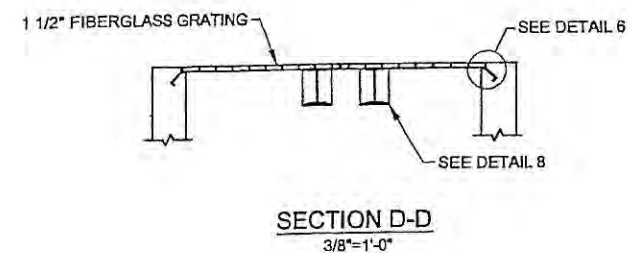
- COAT ENTIRE INTERIOR SURFACES OF CONCRETE STRUCTURES THAT WILL BE SUBMERGED IN WATER AND EXPOSED TO MOISTURE IN THE VAPOR SPACE ABOVE THE WATER LEVEL.
- PREPARATION: ALLOW CONCRETE TO CURE FOR AT LEAST 28 DAYS. REMOVE GREASE, OIL, EFFLORESCENCE, CHALK, DUST, AND DIRT WITH SOAP AND WATER. MAKE SURFACE PREPARATIONS FOR APPLICATION ACCORDING TO MANUFACTURER'S INSTRUCTIONS. PREPARE SURFACE IN ACCORDANCE WITH SPECIFICATIONS FOR SSPC-SP13/NACE SECTION 4.3.1 OR 4.3.2.
- APPLICATION: APPLY ONE ON THE FOLLOWING POLYAMIDE COAL TAR EPOXY SYSTEMS.
 - AMERON: 16 MILS SYSTEM. APPLY TWO (2) COATS OF AMERCOAT 78HB, 8 MILS EACH.
 - SHERWIN-WILLIAMS: 20 MILS SYSTEM.
 - APPLY TWO (2) COATS OF HIGH MIL SHER-TAR EPOXY ENAMEL, B69-40, 10 MILS EACH.
 - NOTE: REQUIRE MINIMUM 7 TO 10 DAYS CURE BEFORE PLACING STRUCTURE IN SERVICE.
 - TNEMEC: 16 MILS SYSTEM. APPLY TWO (2) COATS OF SERIES 46H-413 HI-BUILD TNEMEC-TAR, 8 MILS EACH.



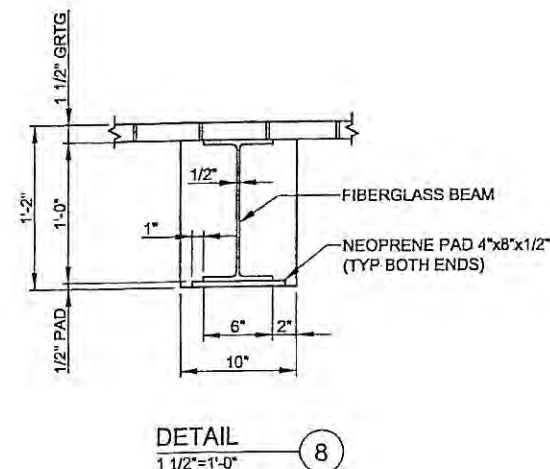
NORTH TEXAS MUNICIPAL WATER DISTRICT			
ROCKWALL-HEATH TRANSFER SEWER RHCF 01-1, SECTION 2			
SANITARY SEWER DETAILS FLOW SPLITTER BOX			
KBR Kellogg Brown & Root, Inc. Engineered by KBR Technical Services, Inc.			
DESIGNED	KBR	HORIZ. SCALE	AS SHOWN
DRAWN	KBR	VERT. SCALE	AS SHOWN
CHECKED	THG	DATE	SEPTEMBER 26, 2003



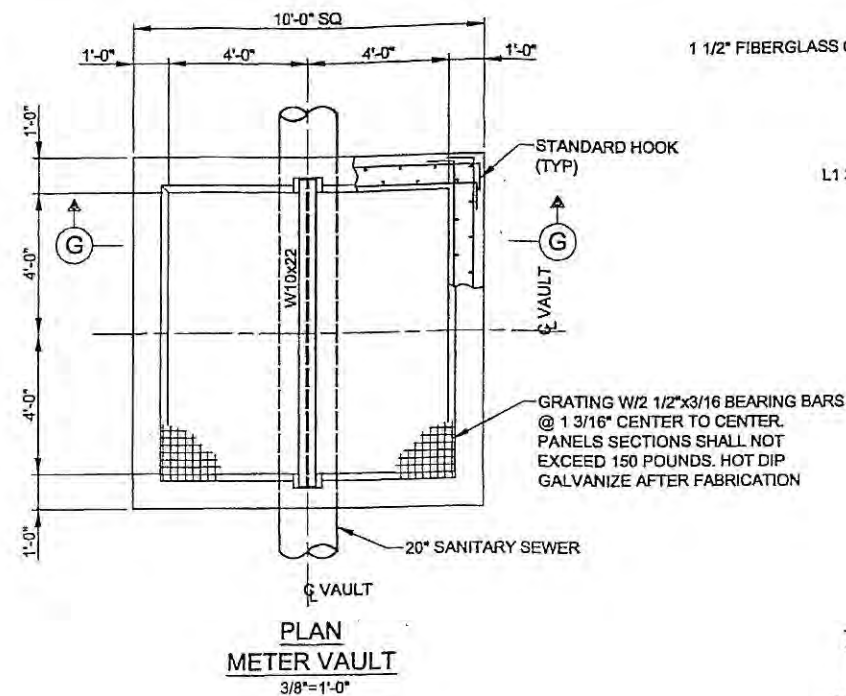
PLAN
GRATING DETAILS
FLOW SPLITTER BOX
3/8"=1'-0"



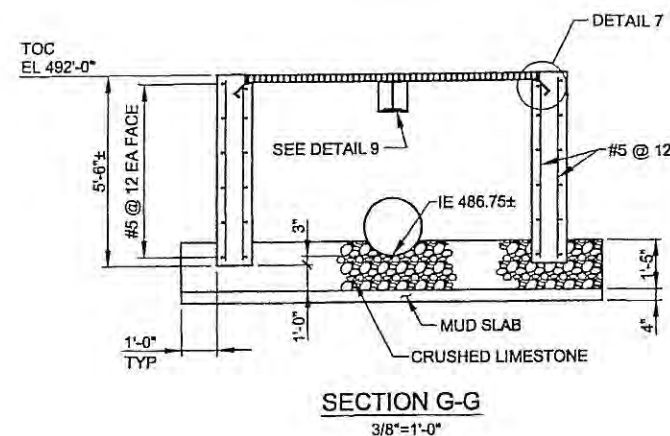
SECTION D-D
3/8"=1'-0"



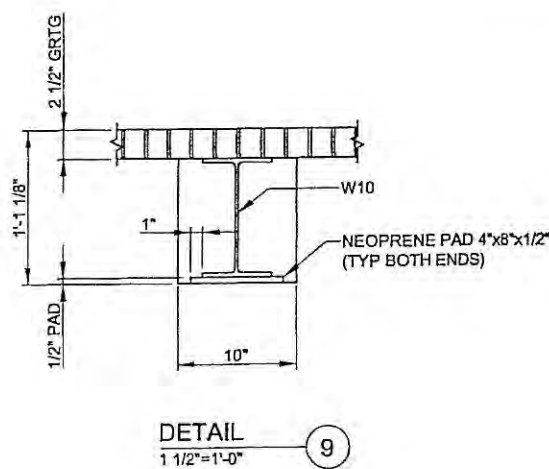
DETAIL
1 1/2"=1'-0"



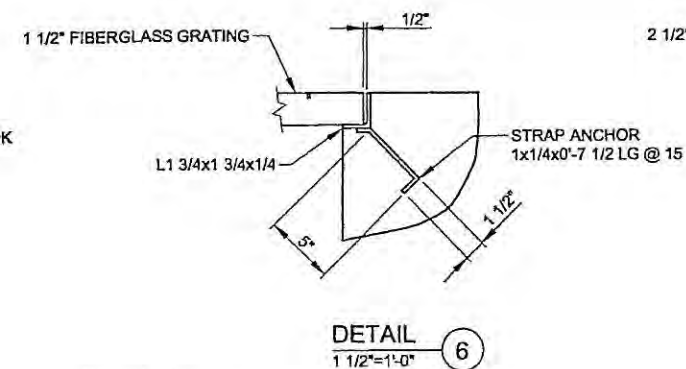
PLAN
METER VAULT
3/8"=1'-0"



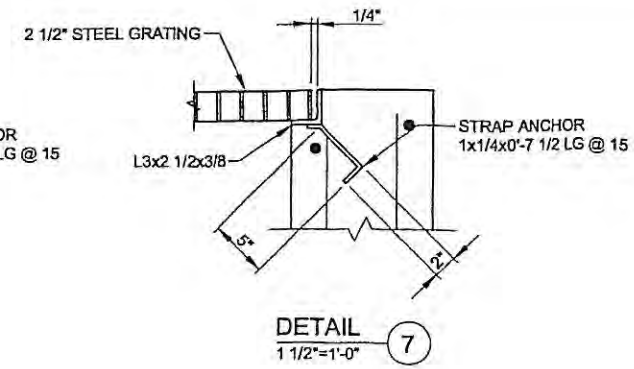
SECTION G-G
3/8"=1'-0"



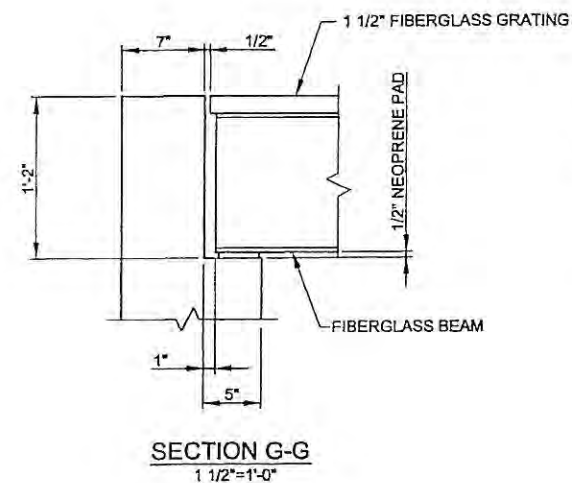
DETAIL
1 1/2"=1'-0"



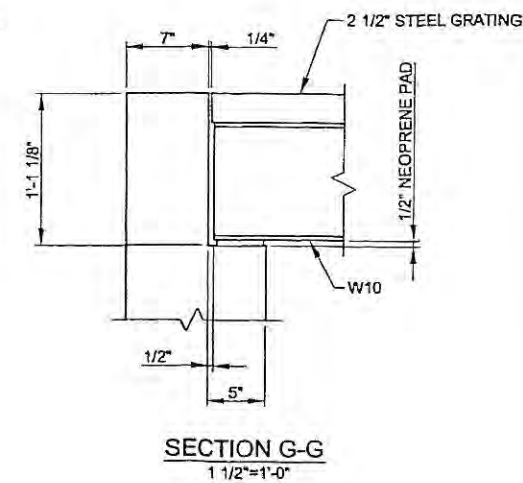
DETAIL
1 1/2"=1'-0"



DETAIL
1 1/2"=1'-0"



SECTION G-G
1 1/2"=1'-0"



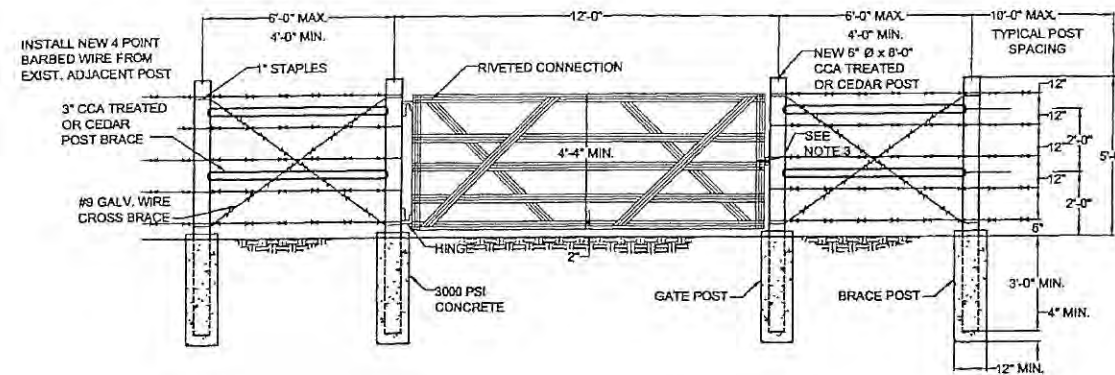
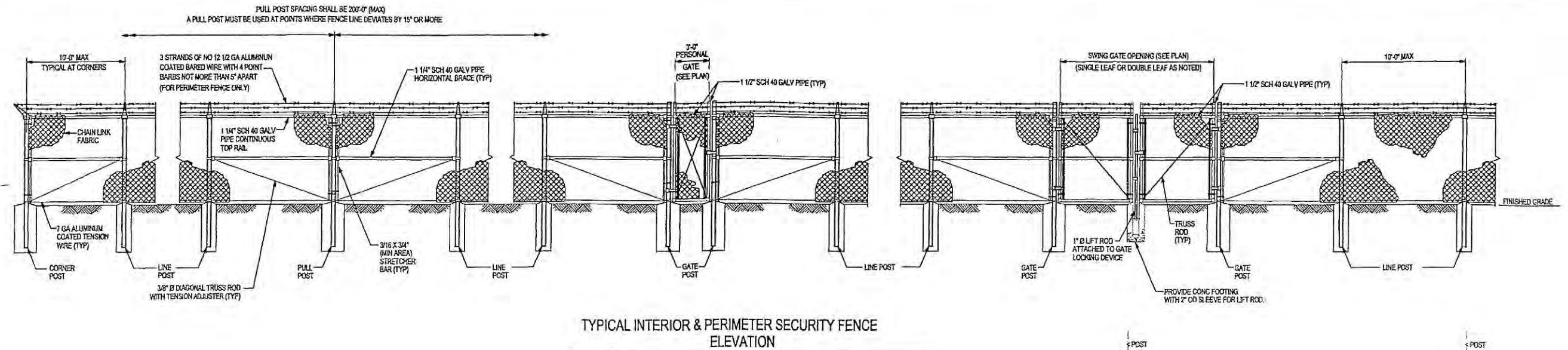
SECTION G-G
1 1/2"=1'-0"

NOTES:

- CONTRACTOR TO VERIFY DIMENSIONS OF SLIDE GATE FRAMES AND ADJUST LOCATION OF FIBERGLASS BEAMS TO AVOID AN INTERFERENCE.
- FIBERGLASS BEAMS TO BE 12" DEEP WITH A 1/2" THICK 4" WIDE FLANGE AND 1/2" THICK WEB.

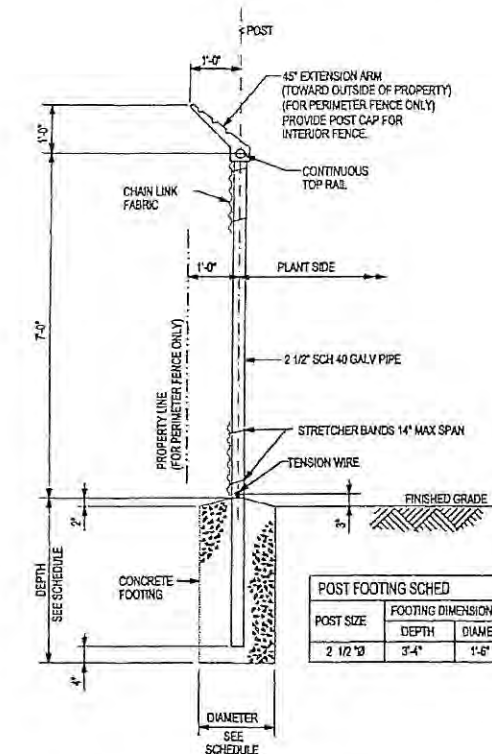
NORTH TEXAS MUNICIPAL WATER DISTRICT			
ROCKWALL-HEATH TRANSFER SEWER RHCF 01-1, SECTION 2			
SANITARY SEWER DETAILS SPLITTER BOX GRATING AND METER VAULT			
KBR Kelliogg Brown & Root, Inc. Engineered by KBR Technical Services, Inc.			
DESIGNED	KBR	HORIZ. SCALE	AS SHOWN
DRAWN	KBR	VERT. SCALE	AS SHOWN
CHECKED	THG	DATE	SEPTEMBER 26, 2003
NO. DATE	REVISIONS	MADE/CKD	JOB NO. CM-0148
		DWG. NO.	34 OF 36



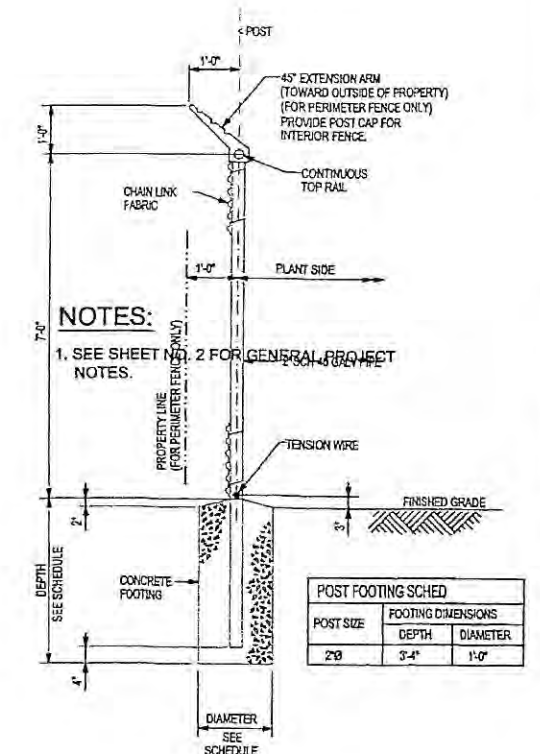


NOTES FOR STEEL GATE:

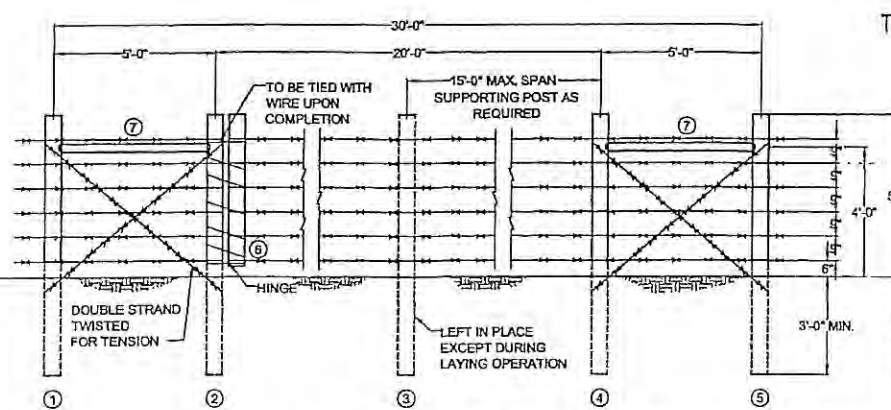
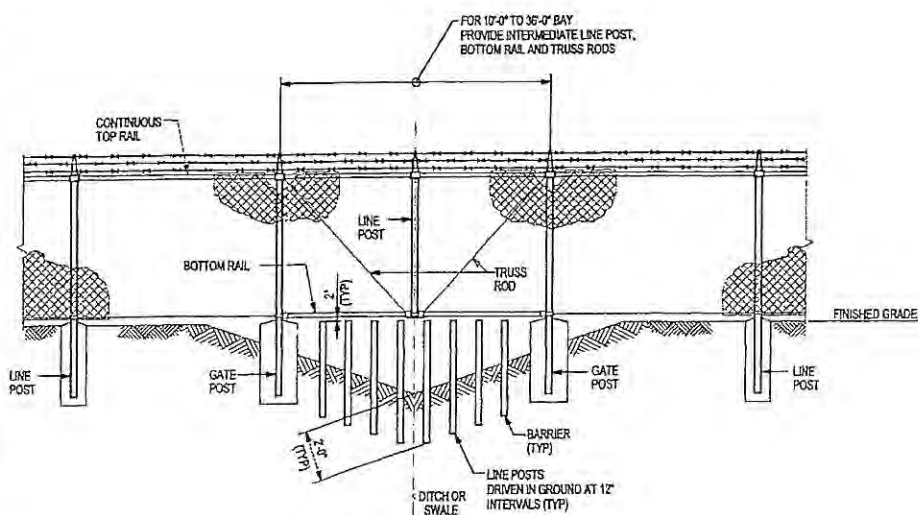
1. GATE MANUFACTURER SHALL FURNISH GALVANIZED HINGES AND HINGE BOLTS.
2. GATE MANUFACTURER SHALL FURNISH GALVANIZED SLIDING LATCHES FOR GATES LOCATED IN FIELD FENCES.
3. CONTRACTOR SHALL FURNISH GALVANIZED CHAIN AND PADLOCK FOR GATES. LOCKS SHALL BE IDENTICAL FOR ALL GATES. MASTER KEY SHALL BE GIVEN TO THE NORTH TEXAS MUNICIPAL WATER DISTRICT. USE MASTER LOCK NUMBER SPECIFIED BY NTMWD.
4. WHERE EXISTING ADJACENT POST IS MORE THAN 6'-0" FROM NEW GATE POST, CONTRACTOR SHALL INSTALL NEW LINE POST 6'-0" MAX. FROM GATE POST.
5. WHERE NEW FENCE IS REQUIRED THE POSTS SHALL BE SPACED AT A MAXIMUM DISTANCE OF 10'-0", SHALL BE 6" Ø MIN. AT TOP, 8'-0" LONG, SET A MINIMUM OF 3'-0" BELOW GROUND AND THOROUGHLY TAMPED IN PLACE.



TYPICAL CORNER, GATE, TEE OR PULL POST SECTION

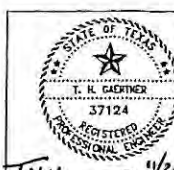


TYPICAL LINE POST SECTION



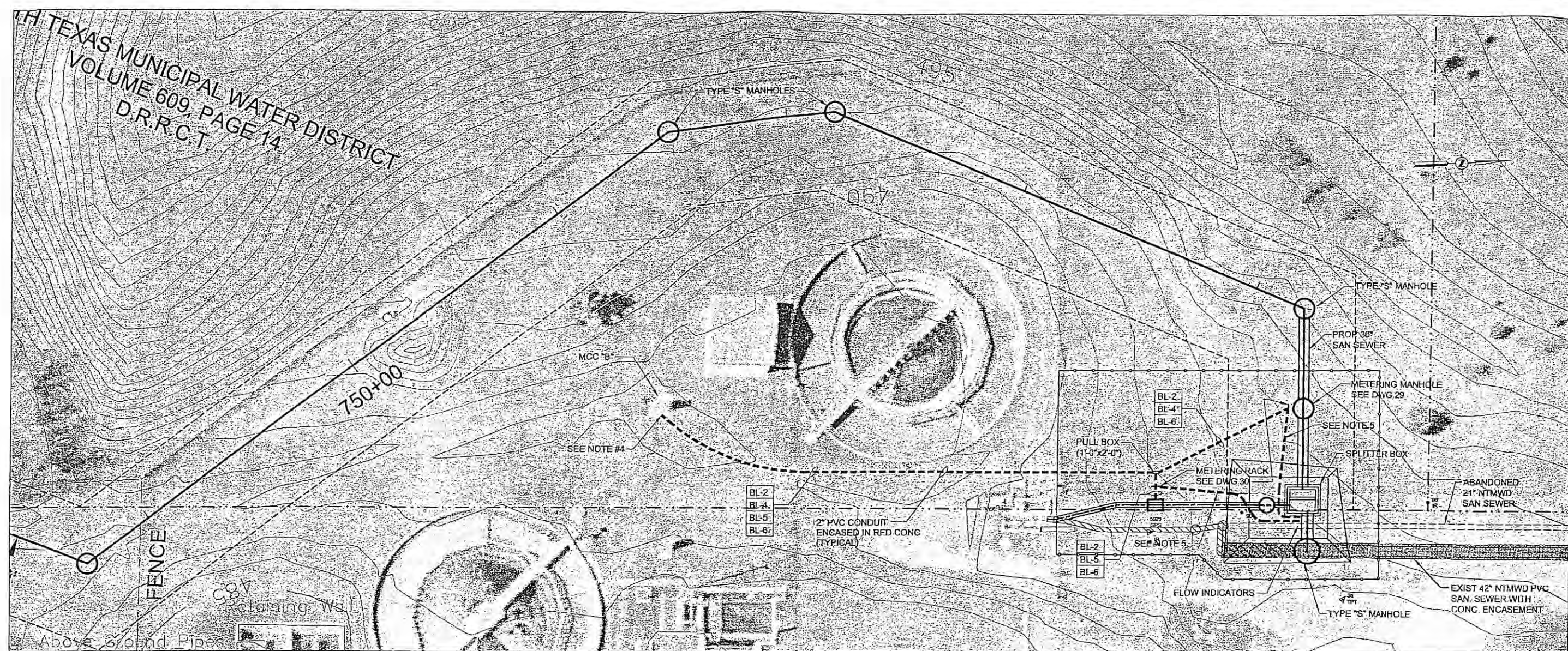
MATERIAL DESCRIPTION

- NO. 1, 2, 3, 4, 5 8" TIP x 8" CCA TREATED OR CEDAR POST
NO. 6 5" x 5" x 4'-9" CCA TREATED OR CEDAR POST
NO. 7 5" x 5" x 5' CCA TREATED OR CEDAR POST
WIRE 12 1/2 GAGE - 4 POINT GALV. BARBED WIRE



NO.	DATE	REVISIONS	MADE BY	CHKD BY
A	11/19/03	Added Permanent Steel Gate detail.	JL	THG
A	11/11/03	Added Gate for Barbed Wire Fence detail.	JL	THG

NORTH TEXAS MUNICIPAL WATER DISTRICT ROCKWALL-HEATH TRANSFER SEWER RHCF 01-1, SECTION 2 SANITARY SEWER DETAILS FENCE DETAILS			
KBR Knlogg Brown & Root, Inc. Engineered by KBR Technical Services, Inc.			
DESIGNED	KBR	HORIZ. SCALE	AS SHOWN
DRAWN	KBR	VERT. SCALE	AS SHOWN
CHECKED	THG	DATE	SEPTEMBER 26, 2003
NO. DATE		REVISIONS	MADE BY



PANEL: "BL"				
LOCATION: MCC "B"				
ENCLOSURE: MCC				
FAULT RATING: 10KA				
VOLTAGE: 120/240				
AMPS: 100				
PHASE: 1				
MLO/MCB: MCB (100A)				
CKT	BRKR	LOAD SERVED	WIRE/CONDUIT	TAG
1	20/1	PORTABLE DEWATERING PUMP RECPT.	2#12, #12G., 3/4"C.	BL-1
2	20/1	METERING STATION LIGHTS	2#12, #12G., 2" DUCT	BL-2
3	20/1	FLOOD LIGHTS	2#12, #12G., 3/4"C.	BL-3
4	20/1	PHARSHALL FLUME FLOW METER	2#12, #12G., 2" DUCT	BL-4
5	20/1	ULTRA SONIC FLOW METER	2#12, #12G., 2" DUCT	BL-5
6	20/1	METERING STATION RECEPTACLES	2#12, #12G., 2" DUCT	BL-6
7	20/1	SPARE		
8	20/1	SPARE		
9	20/1	SPARE		
10	20/1	SPARE		
11	20/1	SPARE		
12	20/1	SPARE		
13	20/1	SPARE		
14	20/1	SPARE		
15	20/1	SPARE		

- NOTES:
- SEE SHEET NO. 2 FOR GENERAL PROJECT NOTES.
 - REMOVAL, PLUGGING, OR ABANDONMENT OF EXISTING FACILITIES TO BE COORDINATED WITH NTMWD.
 - CONTRACTOR TO PROVIDE AND INSTALL EASTECH BADGER, TRANSIT-TIME ULTRASONIC FLOWMETER, MODEL 4600.
 - CONTRACTOR TO VERIFY ANY EXSITING MCC STUB-OUTS. IF NONE ARE AVAILABLE COORDINATE WITH THE CLIENT FOR MCC ENTRY.
 - 1" PVC CONDUIT W/1 TWISTED PAIR #16 AWG SHIELDED CABLE FROM METERING RACK TO FLOW INDICATORS AT THE SPLITTER BOX.



NORTH TEXAS MUNICIPAL
WATER DISTRICT

ROCKWALL-HEATH
TRANSFER SEWER
RHCf 01-1, SECTION 2

SANITARY SEWER
INTERCONNECTION /
ELECTRICAL

KBR

Kollogg Brown & Root, Inc.

Engineered by KBR Technical Services, Inc.

DESIGNED	KBR	HORIZ. SCALE	1"=40'
DRAWN	KBR	VERT. SCALE	
CHECKED	THG	DATE	SEPTEMBER 26, 2003

