

LAKE CHARLES HILLS N.I.D. IMPROVEMENT PLANS SANITARY SEWER

A tract of land being part of Southeast Quarter of
Section 13, Township 47 North, Range 2 East,
St. Charles County, Missouri,

CITY OF O'FALLON GENERAL NOTES

- Underground utilities have been plotted from available information and therefore their locations shall be considered approximate only. The verification of the location of all underground utilities, either shown or not shown on these plans shall be the responsibility of the contractor, and shall be located prior to any grading or construction of the improvements.
- No area shall be cleared without the permission of the Project Engineer.
- Easements shall be provided for sanitary sewers. See plan for location and size of easements. This does not apply to house laterals.
- The City of O'Fallon shall be notified 48 hours prior to construction for coordination and inspection.
- All existing site improvements disturbed, damaged or destroyed shall be repaired or replaced to closely match pre-construction conditions.
- The contractor shall prevent all storm, surface water, mud and construction debris from entering the existing sanitary sewer system.
- All construction and materials shall conform to the current construction standards of the City of O'Fallon. Where conflicts exist, the contractor shall notify the Engineer for resolution.
- All construction methods and practices shall conform with current OSHA standards.
- The Contractor shall assume complete responsibility for controlling all siltation and erosion of the project area. The Contractor shall use whatever means necessary to control erosion and siltation including, but not limited to, staked straw bales and/or siltation fabric fences (possible methods of control are detailed in the plan).
- Control shall commence with grading and be maintained throughout the project until acceptance of the work by the Owner and/or the City of O'Fallon and/or MoDOT. The Contractor's responsibilities include all design and implementation as required to prevent erosion and the depositing of silt. The Owner and/or the City of O'Fallon and/or MoDOT may at their option direct the Contractor in his methods as deemed fit to protect property and improvements. Any depositing of silts or mud on new or existing pavement or in new or existing storm sewers or swales shall be removed after each rain and affected areas cleaned to the satisfaction of the Owner and/or the City of O'Fallon and/or MoDOT.
- Developer must supply City construction inspectors with reports prior to or during site soil testing.
- The area of phase development is 101 Acres affecting 135 Lots.
- No slopes shall exceed 3 to 1.
- All utilities shall be located underground.
- Contractor shall use the designed staging/mobilization area located at the northeast corner of Lorene Drive and Fire Lane Drive. This property is owned by the City of O'Fallon. The contractor shall provide a stabilized entrance and wash down area at site. The contractor shall restore the area after construction of improvements.

AS-BUILT DRAWINGS

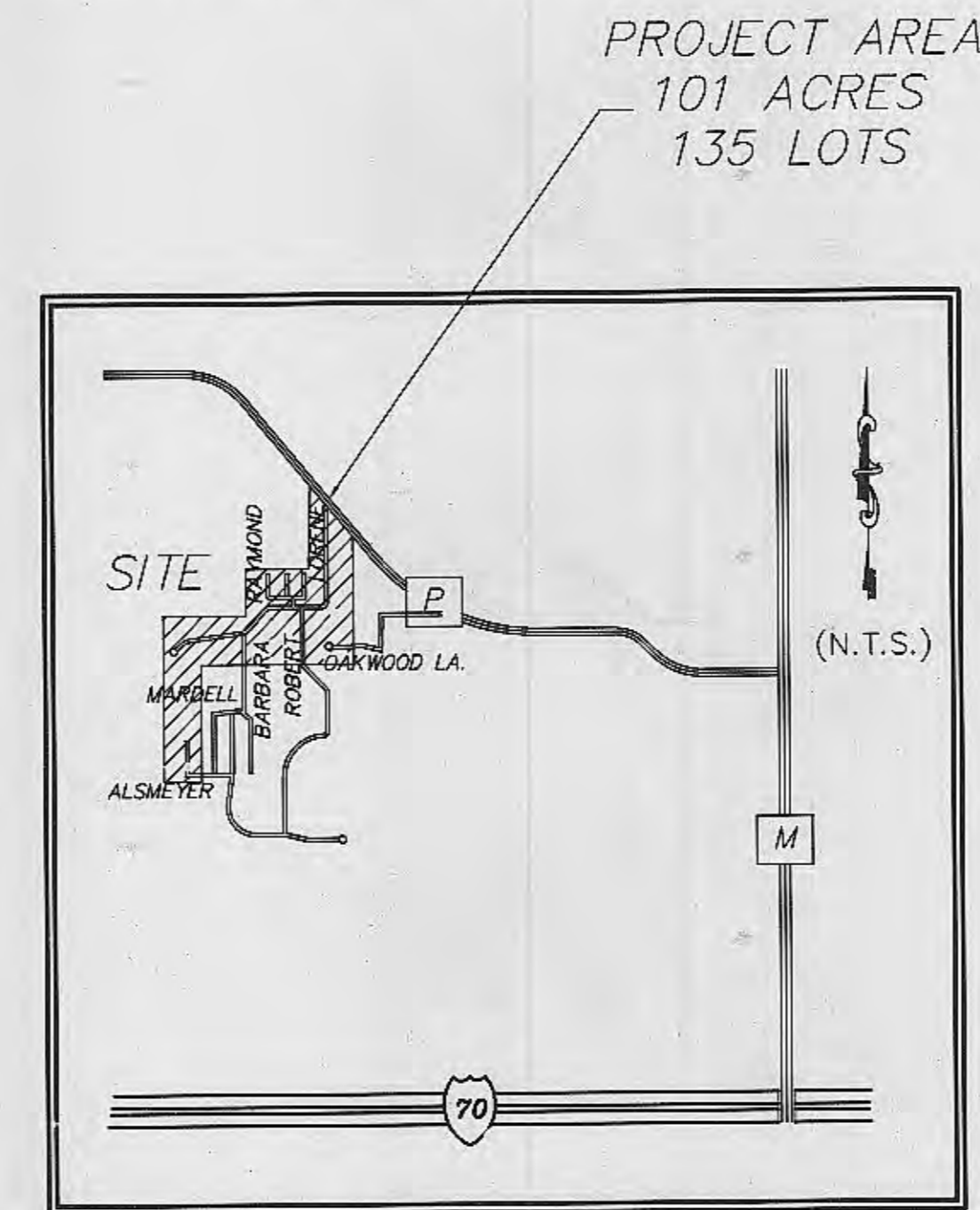
WYE LOCATIONS PROVIDED BY CONTRACTOR

DRAWING INDEX

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1	COVER SHEET
2	OVERALL SHEET
3-8	SITE PLAN
9-16	SANITARY SEWER PROFILES
17-21	DETAILS/EROSION CONTROL NOTES

SANITARY SEWER NOTES

- All manhole bottoms to have at least 0.2' fall. Manhole tops built without elevations furnished by the Engineer will be the responsibility of the sewer contractor.
- 8" P.V.C. sanitary sewer pipe shall meet the following standards:
A.S.T.M.-D-3034 SDR-35, with wall thickness compression joint
A.S.T.M.-D-3212. An appropriate rubber seal water stop as approved by the sewer district shall be installed between P.V.C. pipe and masonry structures.
- All fill placed under proposed storm and sanitary sewer, proposed roads, and/or paved areas shall be compacted to 90% of maximum density as determined by the Modified AASHTO T-180 Compaction Test or 95% of maximum density as determined by the by the Standard Proctor Test AASHTO T-99. All fill placed in proposed roads shall be compacted from the bottom of the fill up. All tests shall be verified by a soils engineer concurrent with grading and backfilling operations. Ensure the moisture content of the soil in fill areas is to correspond to the compactive effort as defined by the Standard or Proctor Test. Optimum moisture content shall be determined using the same test that was used for compaction. Soils compaction curves shall be submitted to the City of O'Fallon prior to the placement of fill. Proof rolling may be required to verify soil stability at the discretion of the City of O'Fallon.
- All trench back fills under paved areas shall be granular back fill, and shall be compacted to 90% of the maximum density as determined by the "Modified AASHTO T-180 Compaction Test," (A.S.T.M.-D-1557). All other trench back fills may be earth material (free of large clods or stones). All trench back fills shall be water jetted.
- All sanitary house connections have been designed so that the minimum vertical distance from the low point of the basement to the flow line of a sanitary sewer at the corresponding house connection is not less than the diameter of the pipe plus the vertical distance of 2 1/2 feet.
- All P.V.C. sanitary sewer is to be SDR-35 or equal with clean 1/2" to 1" granular stone bedding uniformly graded. This bedding shall extend from 4" below the pipe to the springline of the pipe. Immediate back fill over pipe shall consist of same size "clean" or minus stone from spring line of pipe to 12" above the top of pipe.
- All sanitary manholes shall be waterproofed on the exterior in accordance with Missouri Department of Natural Resources specifications 10 CSR-8.120 (7)E.
- Brick will not be used in the construction of sanitary sewer manholes.
- All connections at sanitary structures shall be made with A-LOCK joints or equal.
- All pipes shall have positive drainage through manholes. No flat base structures are allowed. Structures shall have a 0.2' min. difference in invert elevation unless otherwise approved.
- Gas, water and other underground utilities shall not conflict with the depth or horizontal location of existing or proposed sanitary or storm sewers, including house laterals.
- All sanitary and storm sewer trench back fills shall be water jetted. Granular back fill will be used under pavement areas.
- All existing areas disturbed during construction of the sanitary sewer line shall be seeded and mulched to prevent erosion.
- All sanitary sewer laterals shall be a minimum of 4" in diameter per City of O'Fallon.
- Sod or erosion control blankets may be used in disturbed areas as directed by engineer.
- Abandonment of existing septic tanks shall be pump out and abandonment shall be done according to St. Charles County requirements and inspected by the governing authority.
- All foul water drop manholes shall be a minimum of 48" in diameter.
- Only wyes or T-yses as approved by the City of O'Fallon shall be used to connect to sanitary sewer mains.
- Location of septic tanks to be located before construction by existing residents.
- All street crossings can be open cut per the St. Charles County Highway Department Standard Specifications.
- Rock backfill shall be used in all sanitary sewers that lie within the 1:1 shear plane of the road.
- Rock excavation shall consist of either trenching, boring or breaking. Blasting is not permitted.
- St. Charles County Highway Department shall be notified 48 hours prior to any work performed in their Right of Way. Contact Vance Gribble. (636-949-7900 Ext. 7154). All work must meet St. Charles County Highway Standard Specifications.
- All sewer main will be maintained by the City of O'Fallon. Laterals to be private and the responsibility of the homeowner, including grinder pumps.
- LATERAL LOCATIONS ARE APPROXIMATE. WYE LOCATIONS TO BE DETERMINED IN THE FIELD AT THE TIME OF CONSTRUCTION. ALL LATERALS WILL BE FIELD LOCATED AND SHOWN ON THE AS-BUILT PLANS. CONTRACTOR IS RESPONSIBLE FOR STATIONING WYES.



LOCATION MAP

LEGEND

—●— Sanitary Sewer (Proposed)	⊗ Sanitary Structure	R.C.P. Reinforced Concrete Pipe
—○— Sanitary Sewer (Existing)	⊗ Storm Structure	C.M.P. Corrugated Metal Pipe
--- Storm Sewer (Proposed)	⊕ Test Hole	C.I.P. Cast Iron Pipe
--- Storm Sewer (Existing)	⊙ Power Pole	P.V.C. Polyvinyl Chloride
—*— Water Line & Size	⊙ Light Standard	V.C.P. Vitrified Clay Pipe
—Ex W— Existing water line	⊙ Double Water Meter Setting	C.O. Clean Out
⊕ Tee & Valve	⊙ Single Water Meter Setting	V.T. Vent Trap
⊕ Hydrant	C.I. Curb Inlet	T.B.R. To Be Removed
⊕ Cap	S.C.I. Skewed Curb Inlet	T.B.R. & R To Be Removed & Relocated
18 Lot or Building Number	D.C.I. Double Curb Inlet	T.B.P. To Be Protected
—x— Existing Fence Line	G.I. Grate Inlet	T.B.A. To Be Abandoned
⊕ Existing Tree Line	A.I. Area Inlet	B.C. Base Of Curb
⊕ Street Sign	D.A.I. Double Area Inlet	T.C. Top Of Curb
⊕ Existing Contour	C.C. Concrete Caltar	T.W. Top Of Wall
⊕ Proposed Contour	F.E. Flared End Section	B.W. Base Of Wall
⊕ Rip-Rap	E.P. End Pipe	(TYP) Typical
⊕ End of Lateral	E.D. Energy Dissipater	U.N.O. Unless Noted Otherwise
⊕ Asphalt Pavement	U.I.P. Use in Place	--- Siltation Control (Typ.)
⊕ Concrete Pavement	M.H. Manhole	
	C.P. Concrete Pipe	

PROJECT BENCHMARK RM-78: 447.61 CHISLED SQUARE ON WEST HEADWALL OF CONCRETE CULVERT LOCATED ABOUT 25 FEET NORTHWEST OF INTERSECTION OF DALBOW ROAD AND STATE HIGHWAY 79.

SITE BENCHMARK: 577.82 EXISTING FIRE HYDRANT (BOTTOM FLANGE SILL) ⊕ FRONT CORNER OF LOT 36 & 37, AT A STREET CURVE IN FRONT OF #405 LORENE DR.

CONSTRUCTION TO START SUMMER OF 2007
CONSTRUCTION TO END SUMMER OF 2008

FIRM MAP NUMBER: 29183C0230E
AUGUST 2, 1996

Estimated sanitary flow is 53,280 Gallons per day.

UTILITY NOTES

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- Easements shall be provided for sanitary sewer mains, and any private laterals if needed. See Easement Exhibits for location and size of easements.
- All construction and materials shall conform to the current construction standards of the City of O'Fallon.
- All utilities shown are existing, unless otherwise noted. All new utilities shall be located underground.

This tract is served by:
STORM SEWER - CITY OF O'FALLON
WATER - CITY OF O'FALLON
TRAFFIC LOCATES - CITY OF O'FALLON
SANITARY SEWER - CITY OF O'FALLON
ELECTRIC - AMEREN

TELEPHONE - CENTURYTEL
FIRE - O'FALLON FIRE PROTECTION DISTRICT
SCHOOL DISTRICT - FORT ZUMWALT
CABLE COMPANY - CHARTER COMMUNICATIONS

PICKETT RAY & SILVER

Civil Engineers
Planners
Land Surveyors

333 Mid Rivers Mall Dr.
St. Peters, MO 63376
397-1211 FAX 397-1104

To THE CITY OF O'FALLON.
These "As-Built" SANITARY SEWERS plans are based on actual field measurements conducted during August, September, October 2008 and the results are shown hereon.



By: *Stanley M. Mundwiller*
STANLEY M. MUNDWILLER LPI S-2005019226
STATE OF MISSOURI

PICKETT, RAY & SILVER'S CORPORATE
REGISTRATION NO. LS-54-D

REVISED 12-29-06 PER CITY LETTER 12/06/06
REVISED SHEETS 1,3-7,19 & 21 4-26-06 REVISED 4-13-07

ENGINEERS AUTHENTICATION
The responsibility for professional engineering liability on this project is hereby limited to the set of plans authenticated by the seal, signature and date hereunder attached. Responsibility is disclaimed for all other engineering plans included in the project and specifically includes revisions after this date unless reauthenticated.

PICKETT, RAY & SILVER, INC.

SIGNATURE DATE

PREPARED FOR:

DEVELOPER:

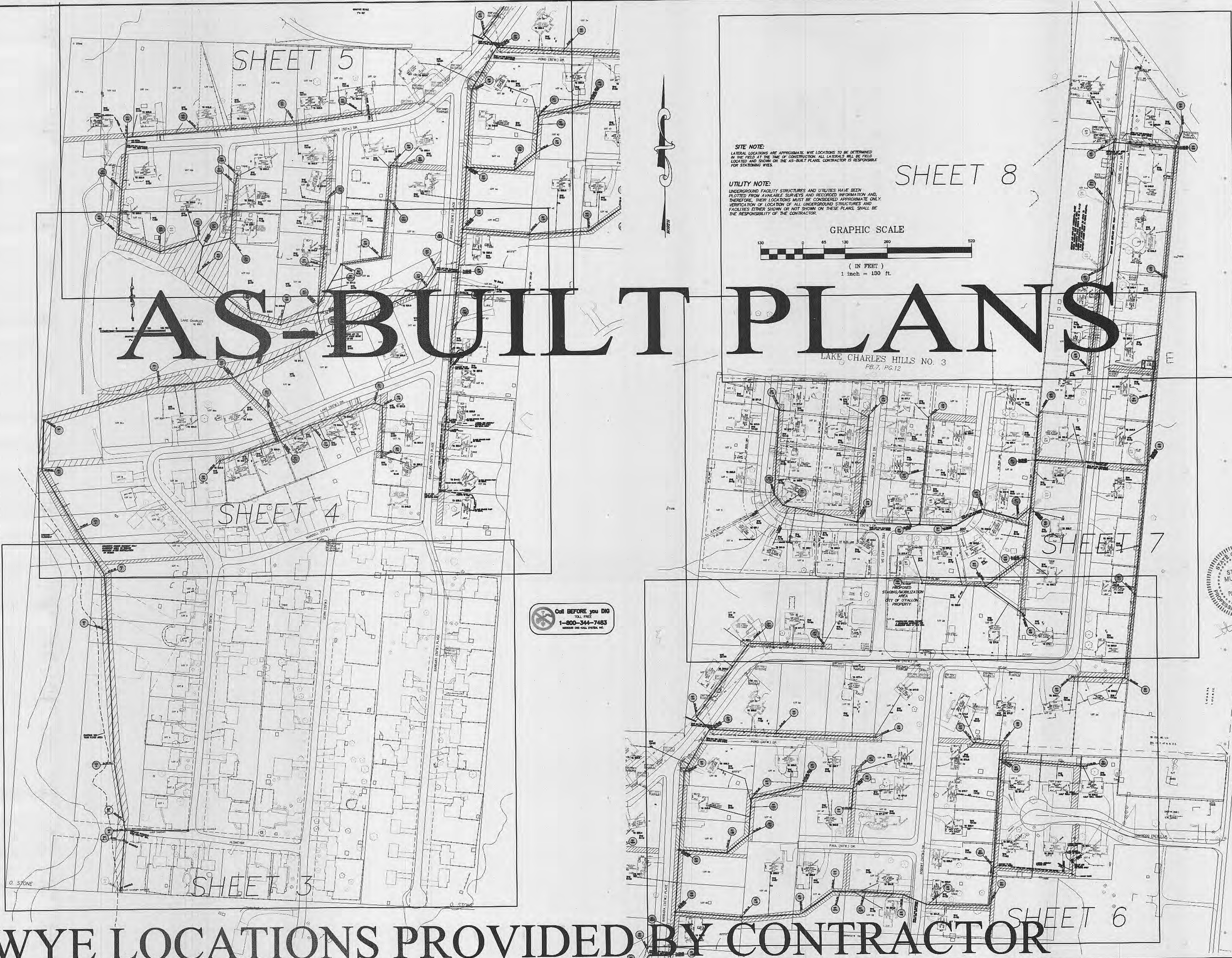
Mr. Charles Feldman, P.E.
St. Charles County Gov't
201 N. Second St.- Suite 420
St. Charles, MO 63301
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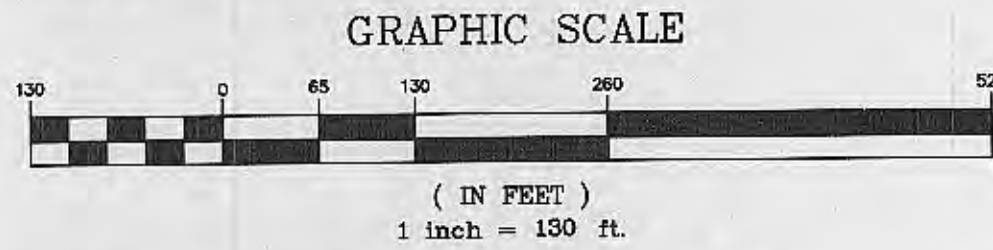
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CHECKED D.S.T.	DATE 07-21-05	
FIELD BOOK 934	PROJECT # 83054-STCC.OOR	21
	JOB ORDER #	

AS-BUILT PLANS



SITE NOTE:
LATERAL LOCATIONS ARE APPROXIMATE. WYE LOCATIONS TO BE DETERMINED IN THE FIELD AT THE TIME OF CONSTRUCTION. ALL LATERALS WILL BE FIELD LOCATED AND SHOWN ON THE AS-BUILT PLANS. CONTRACTOR IS RESPONSIBLE FOR STATIONING WYES.

UTILITY NOTE:
UNDERGROUND FACILITY STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORDED INFORMATION AND, THEREFORE, THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. VERIFICATION OF LOCATION OF ALL UNDERGROUND STRUCTURES AND FACILITIES EITHER SHOWN OR NOT SHOWN ON THESE PLANS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.



LAKE CHARLES HILLS NO. 3
PB. 7, PG. 12

Call BEFORE you DIG
TOLL FREE
1-800-344-7483
MISSOURI DEPT. OF TRANSPORTATION

STATE OF MISSOURI
STANLEY M. MUNDWILLER
NUMBER
PLS-2005019226
PROFESSIONAL LAND SURVEYOR

Stanley M. Mundwiller
02/04/09

PICKETT RAY & SILVER
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LAKE CHARLES HILLS N.I.D.
IMPROVEMENT PLANS
OVERALL PLAN
Prepared For:
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201 N. Second St., Suite #20
St. Charles, MO 63041
Phone (636) 946-0554
Fax: (636) 946-7335

REVISIONS	NO.	DATE	PER CITY COMMENTS
	1	7-18-05	

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DST	01/04/04
PROJECT # 63054.STCC.00R	TASK # 1
FIELD BOOK	

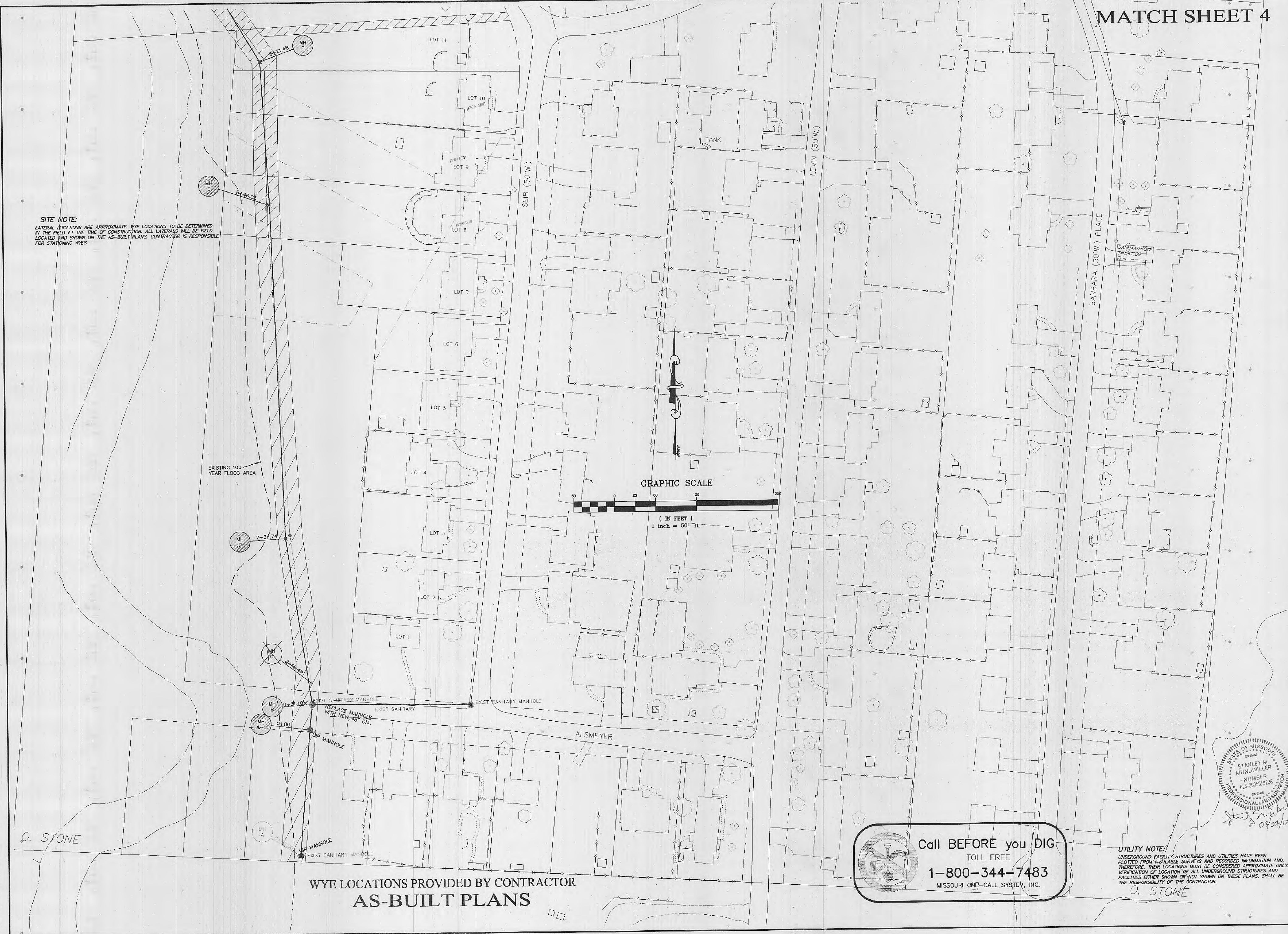
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IMPROVEMENT PLANS
OVERALL PLAN
SHEET 2 OF 21
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WYE LOCATIONS PROVIDED BY CONTRACTOR

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WYE LOCATIONS PROVIDED BY CONTRACTOR AS-BUILT PLANS

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LAKE CHARLES HILLS N.I.D.
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 SITE PLAN

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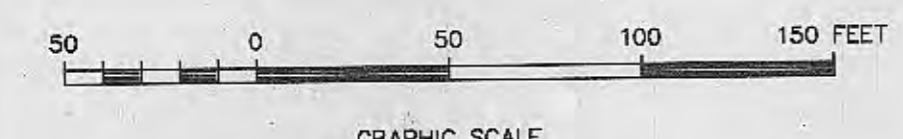
REVISIONS NO.	DATE	PER CITY COMMENTS
1	7-16-06	PER CITY COMMENTS
2	12-16-06	SHOW EXIST' PER CITY COMMENTS
3	4-20-08	Revised Budget Areas
4	12-29-08	PER CITY LETTER 12/08/08

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TASK #	1	FIELD BOOK	

WYE LOCATIONS PROVIDED BY CONTRACTOR
AS-BUILT PLANS



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PROPERTY OWNER REQUEST THAT EASEMENT AREA TO REMAIN BENCHMARKED AFTER INSTALLATION OF SEWER.

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SITE NOTE:
LATERAL LOCATIONS ARE APPROXIMATE. USE LOCATIONS TO BE DETERMINED BY FIELD SURVEY. ALL UTILITIES WILL BE FIELD LOCATED AND SHOWN ON THE AS-BUILT PLANS. CONTRACTOR IS RESPONSIBLE FOR STATIONING WYES.



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LAKE CHARLES HILLS N.I.D.
IMPROVEMENT PLANS
SITE PLAN

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NO.	DATE	PER CITY COMMENTS
1	7-16-05	SHOW 85% BUFFER AREAS
2	12-15-05	Noted Buffer Areas
3	4-28-06	PER CITY LETTER 12/06/06
4	12-29-06	PER CITY LETTER 1/15/07
5	2-02-07	PER CITY LETTER 1/15/07
6	4-13-07	FORCE MAIN

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PROJECT # 83054.STCC.00R
TASK # 1 FIELD BOOK

MATCH SHEET 6

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AS-BUILT PLANS



GRAPHIC SCALE
1" = 50'

WYE LOCATIONS PROVIDED BY CONTRACTOR

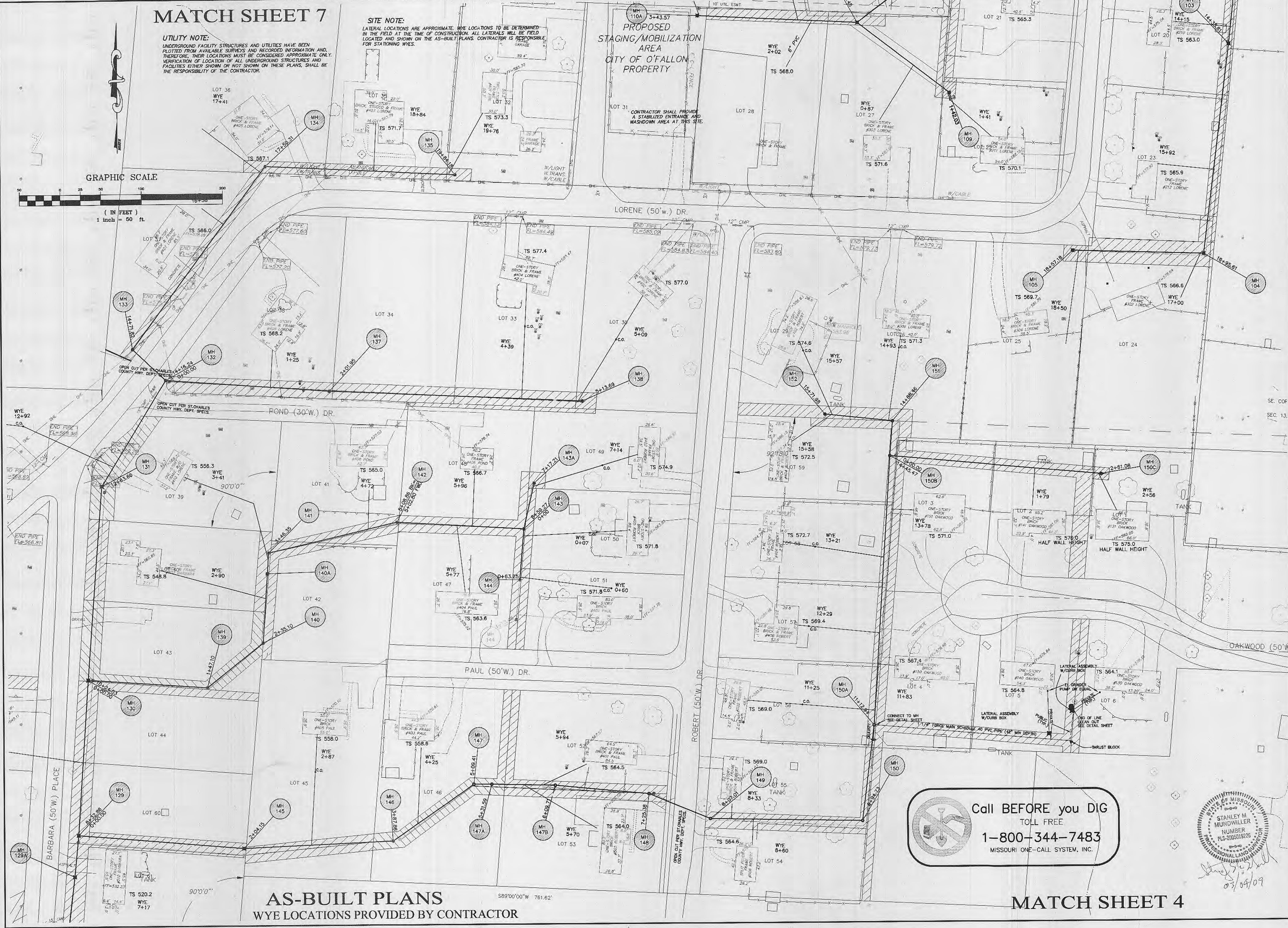
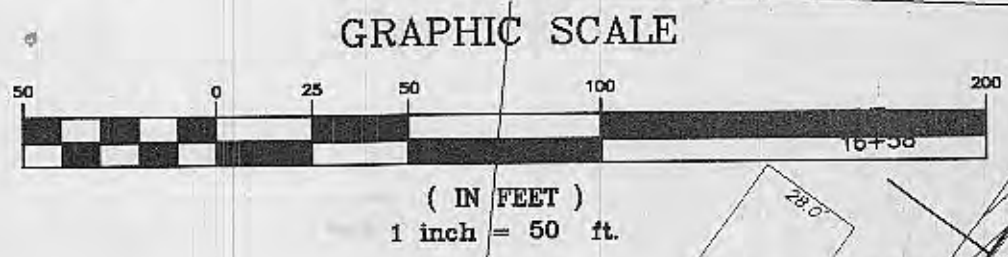


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PROPOSED STAGING/MOBILIZATION AREA
CITY OF O'FALLON PROPERTY
CONTRACTOR SHALL PROVIDE A STABILIZED ENTRANCE AND WASHDOWN AREA AT THIS SITE.



AS-BUILT PLANS
WYE LOCATIONS PROVIDED BY CONTRACTOR

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Fax: (636) 949-7336

NO.	DATE	PER CITY COMMENTS
1	7-18-05	PER CITY COMMENTS
2	12-12-05	SHOW WENT, PER CITY COMMENTS
3	4-28-06	Sediment control to Lots 23 & 24 also lots 64-66, 4-6
4	12-29-06	PER CITY LETTER 12/08/06
5	12-02-07	PER CITY LETTER 1/16/07
6	4-13-07	FORCE MAIN

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PROJECT	# 83064.STCC.OOR	FIELD	BOOK

LAKE CHARLES HILLS N.I.D.
IMPROVEMENT PLANS
SITE PLAN
SHEET **6** OF **21**
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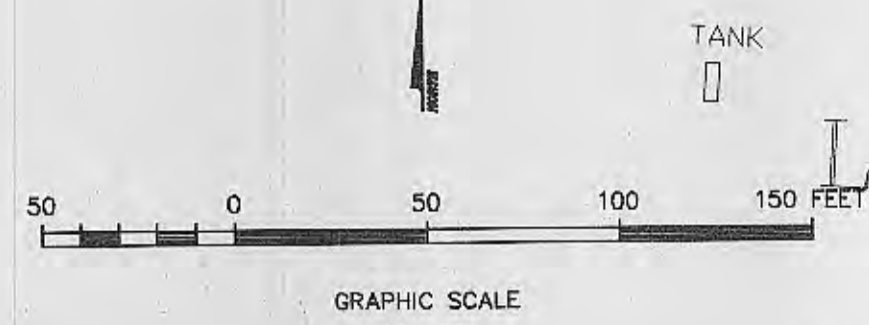
MATCH SHEET 8

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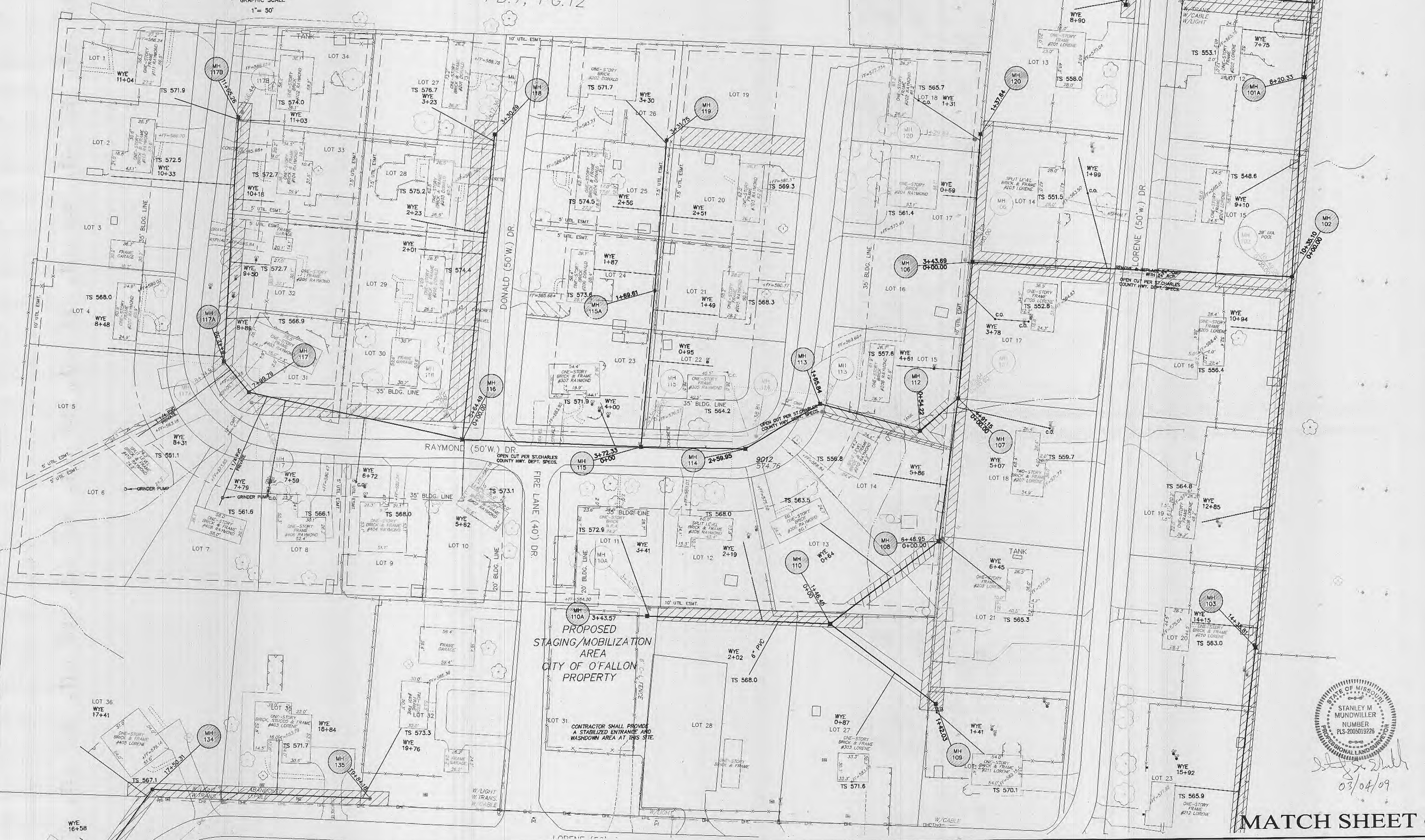
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AS-BUILT PLANS WYE LOCATIONS PROVIDED BY CONTRACTOR

LAKE CHARLES HILLS NO. 3
 PB. 7, PG. 12



PICKETT RAY & SILVER

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NO.	DATE	PER CITY COMMENTS
1	7-18-05	SHOW ESM'T. PER CITY COMMENTS
2	12-15-05	Settlement control to Lots 20 & 23
3	4-28-06	PER CITY LETTER 12/09/06
4	8-02-07	PER CITY LETTER 1/15/07 RCP
5	4-13-07	NOTED RAR 24 CMP W/ 24" RCP
6		

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TASK #	1		
	FIELD	BOOK	

LAKE CHARLES HILLS N.I.D.
 IMPROVEMENT PLANS
 SITE PLAN
 SHEET **7** OF **21**

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MATCH SHEET 6

NO.	DATE	PER CITY COMMENTS
1	7-18-06	PER CITY COMMENTS
2	12-15-06	SHOW WEST. PER CITY LETTER 12/09/06
3	12-29-06	PER CITY LETTER 12/09/06

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DRAWN	MK	DATE	01/04/04
CHECKED	DST	DATE	01/04/04
PROJECT #	63054.STCC.00R		
TASK #	1	FIELD BOOK	

AS-BUILT PLANS
 WYE LOCATIONS PROVIDED BY CONTRACTOR

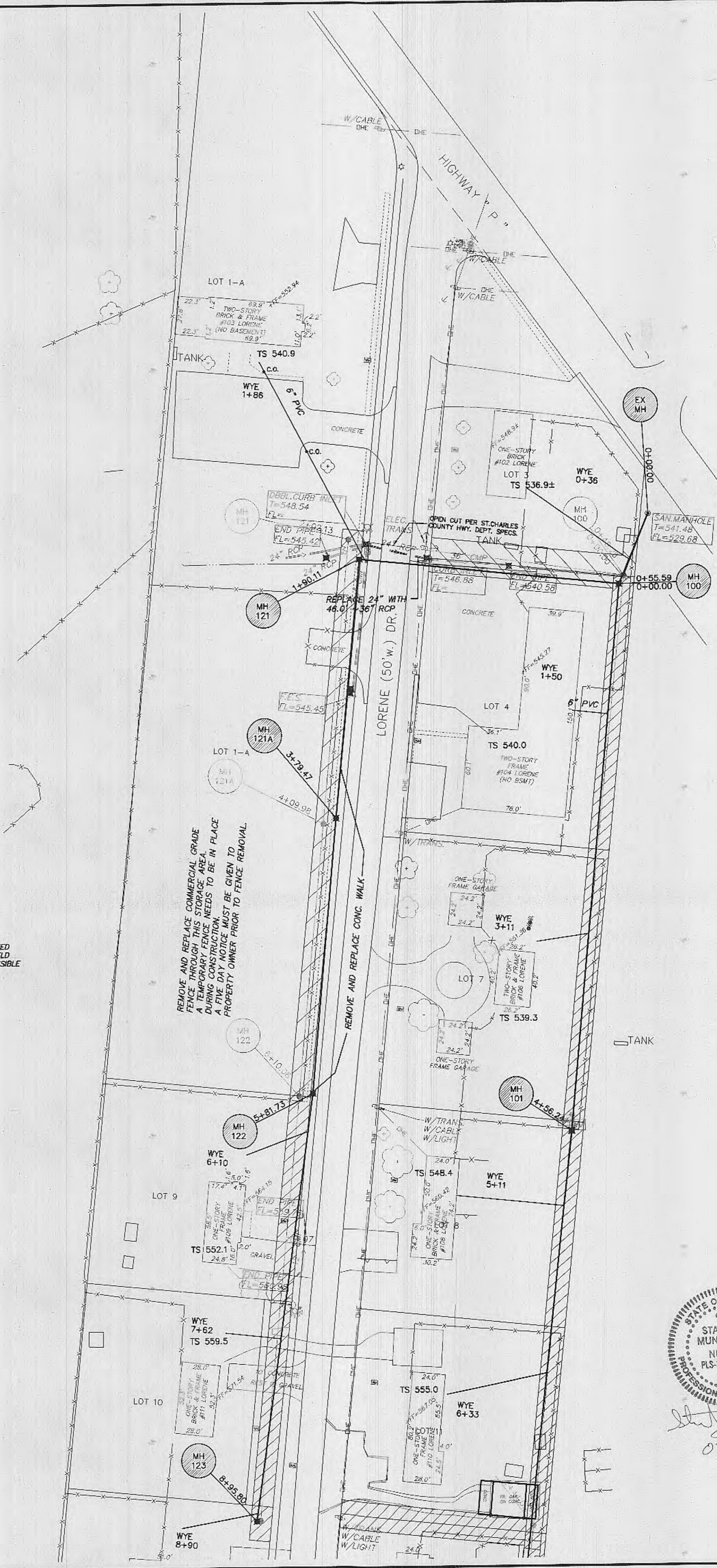
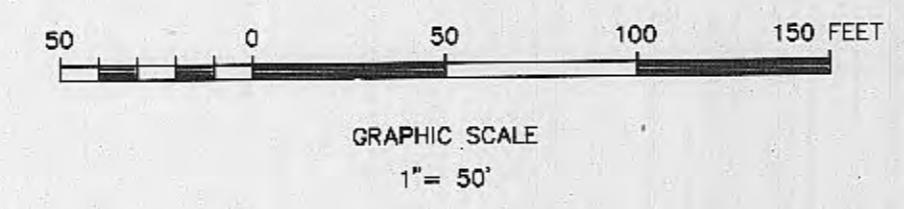
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SITE NOTE:
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REMOVE AND REPLACE COMMERCIAL GRADE THROUGH THIS STORAGE AREA IN PLACE DURING CONSTRUCTION. NEEDS TO BE IN PLACE THE DAY NOTICE MUST BE GIVEN TO PROPERTY OWNER PRIOR TO FENCE REMOVAL.

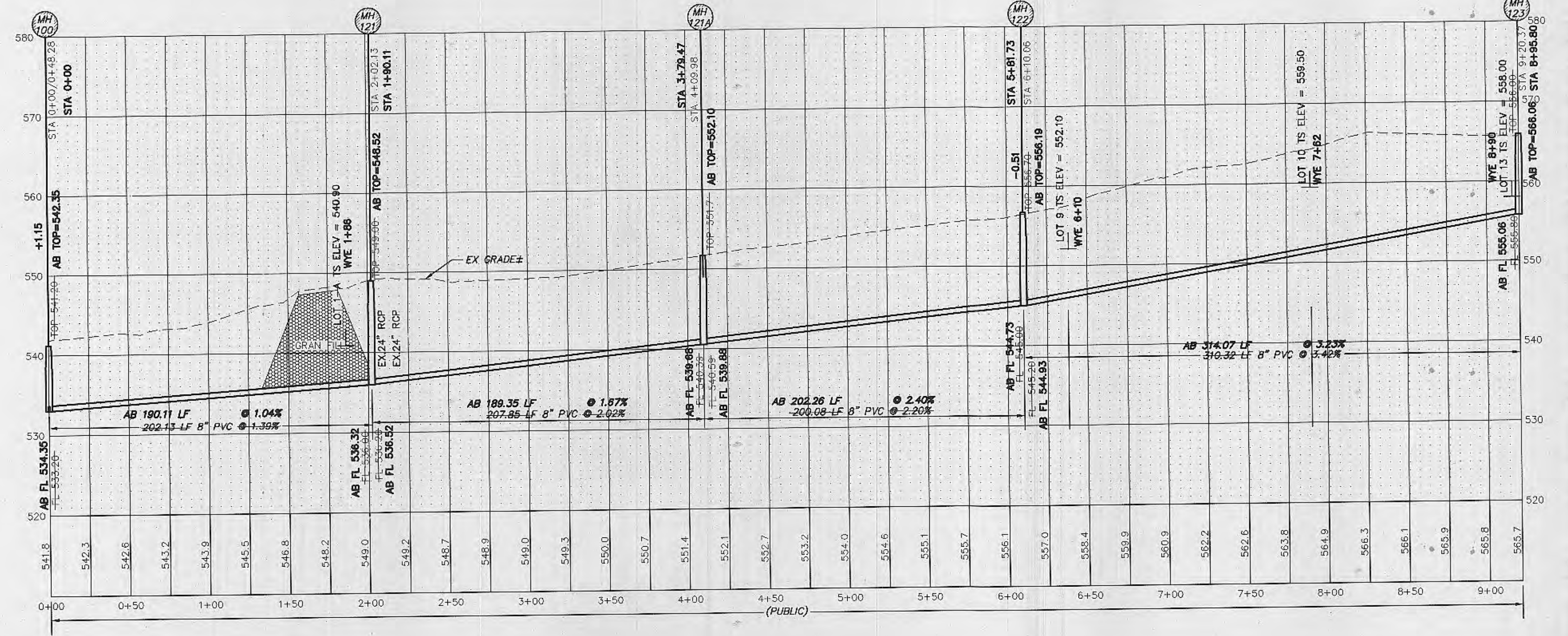
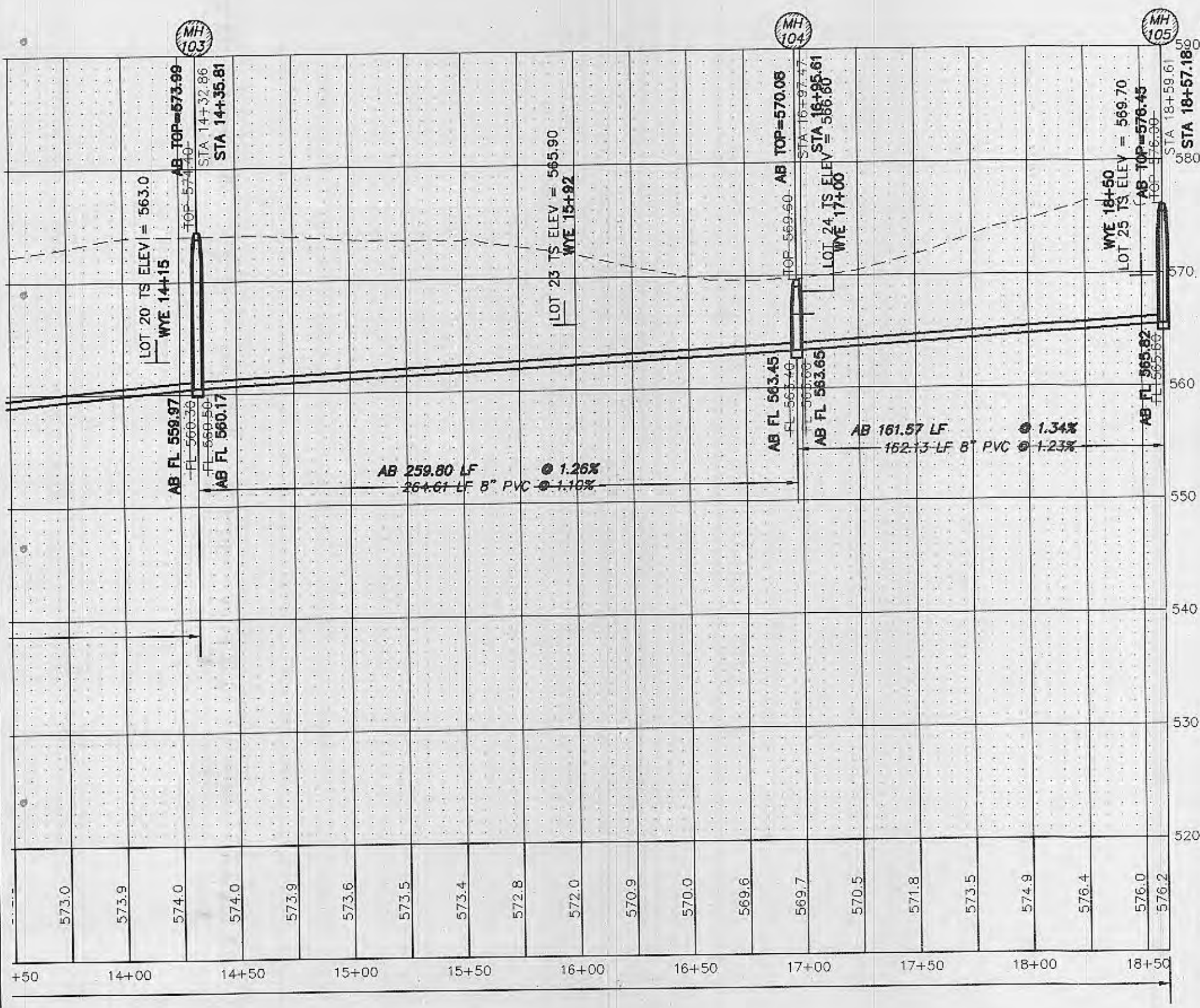
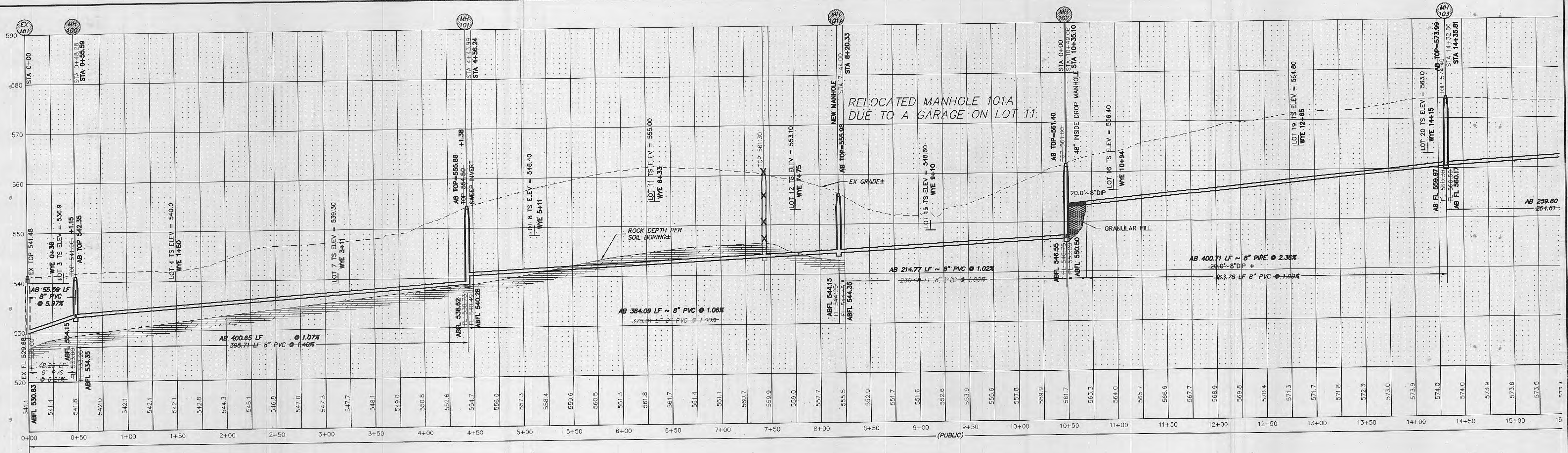
REMOVE AND REPLACE CONC. WALK



STATE OF MISSOURI
 STANLEY M MUNDWILLER
 NUMBER PLS-2005019226
 PROFESSIONAL LAND SURVEYOR
 03/04/09

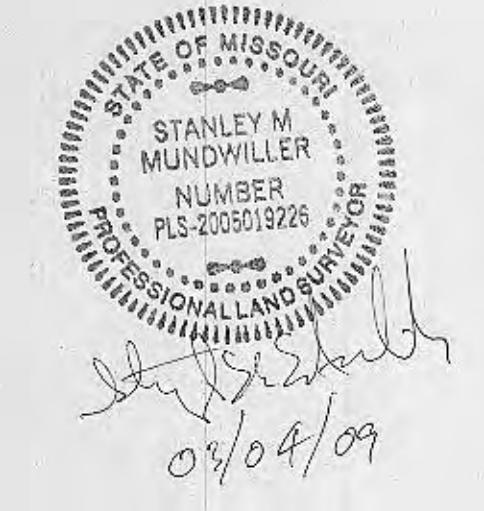
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WYE LOCATIONS PROVIDED BY CONTRACTOR

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SCALE: HORIZONTAL 1"=50'
VERTICAL 1"=10'

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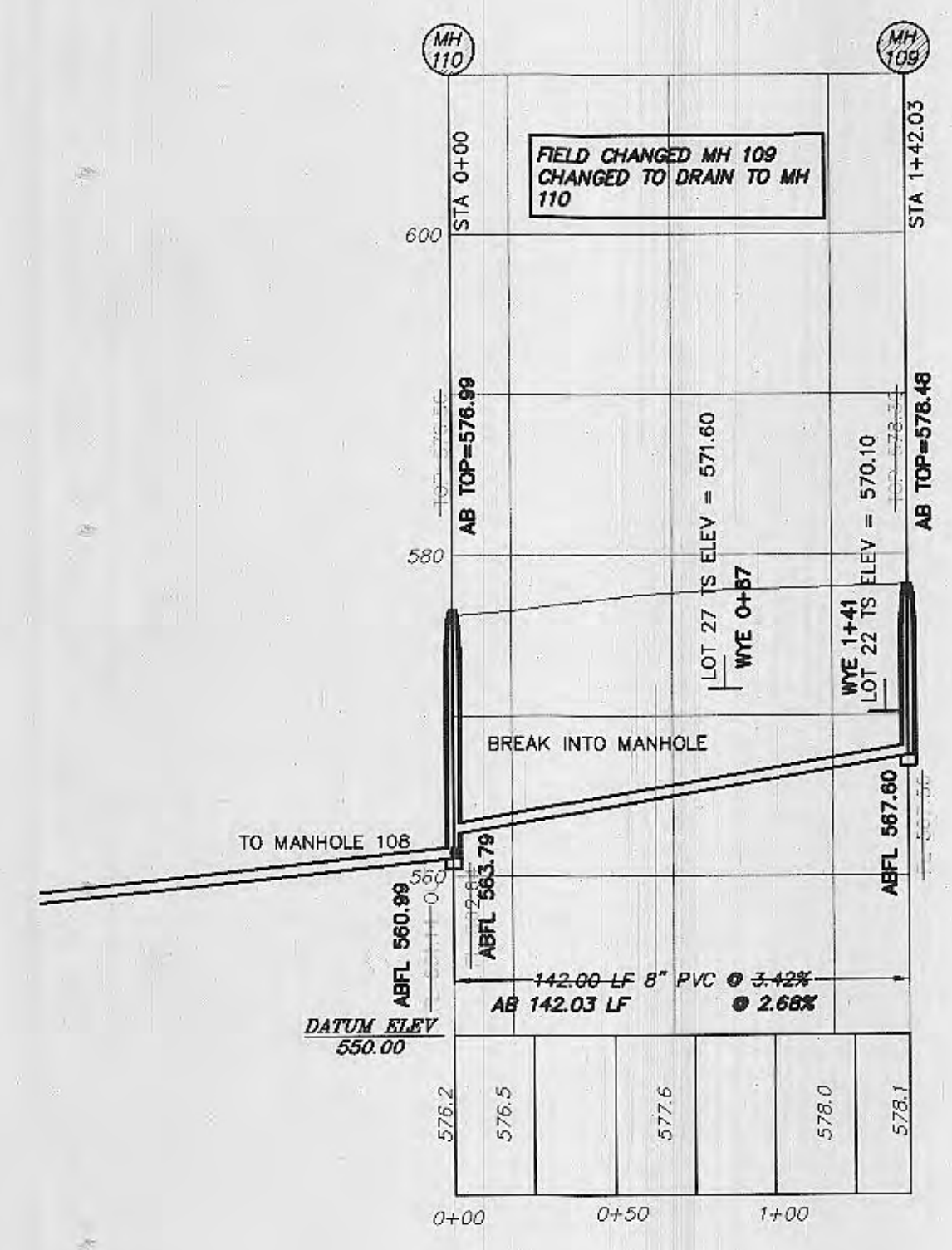
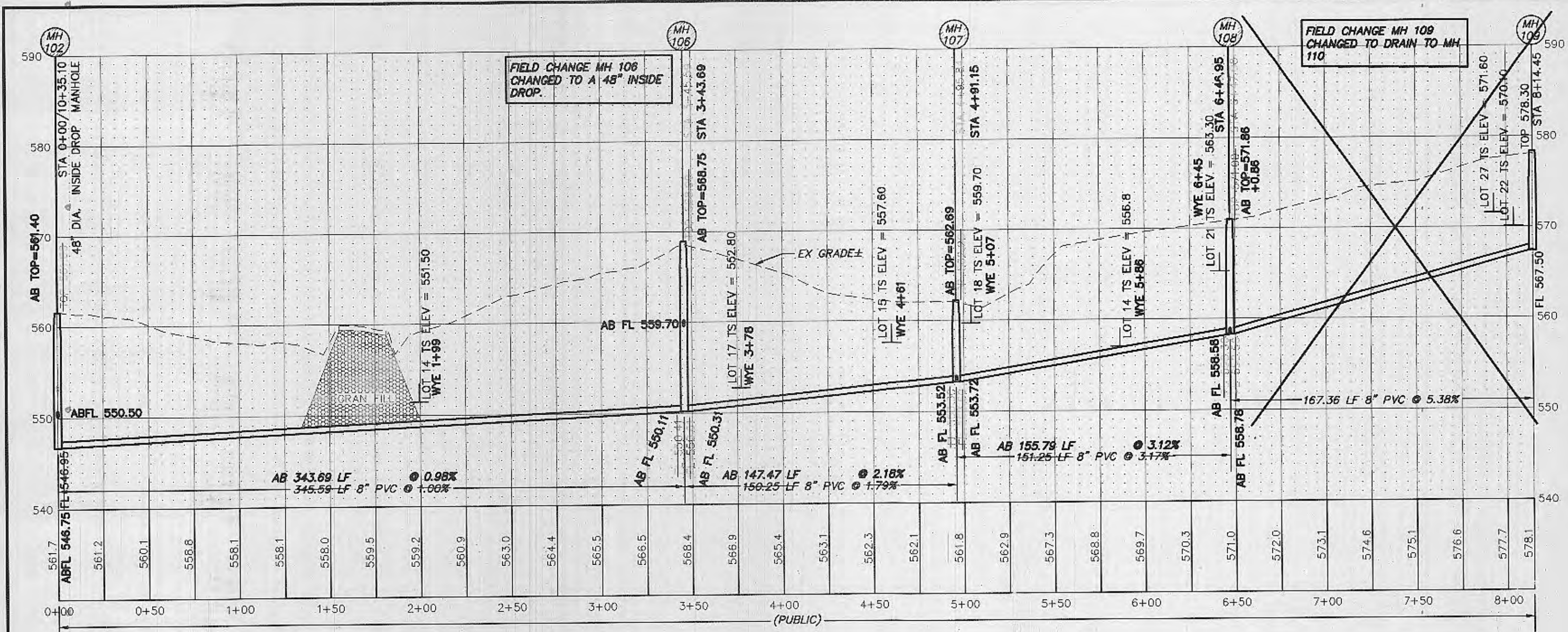
PICKETT RAY & SILVER
CIVIL ENGINEERS
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LAND SURVEYORS
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St. Peters, MO 63376
Phone (636) 397-1211
Fax (636) 397-1104

LAKE CHARLES HILLS N.I.D.
IMPROVEMENT PLANS
SANITARY SEWER PROFILES
Prepared For:
ST. CHARLES COUNTY

REVISIONS	NO.	DATE	PER CITY COMMENTS
	1	7-18-05	PER CITY SHOW 0.2' DROP IN MH'S
	2	8-16-05	PER CITY LETTER 12/06/05
	3	12-29-06	PER CITY LETTER 12/06/05

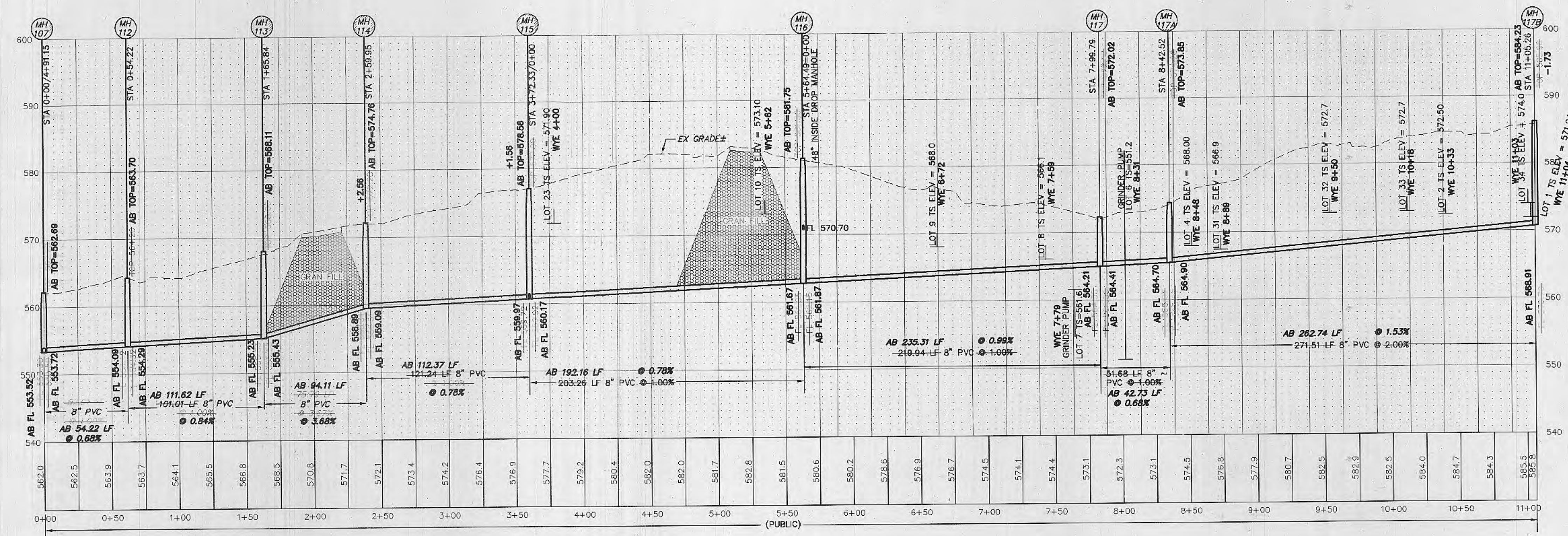
ENGINEERS AUTHENTICATION
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DRAWN	MK	DATE	01/04/04
CHECKED	DST	DATE	01/04/04
PROJECT #	B3054.STCC.00R		
TASK #	1	FIELD BOOK	



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AS-BUILTS
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VERTICAL 1"=10'

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Mr. Charles Feldman
 St. Charles County Gov't
 201 N. Second St., Suite 420
 St. Charles, MO 63301
 Phone (636) 949-4900
 Fax (636) 949-7336

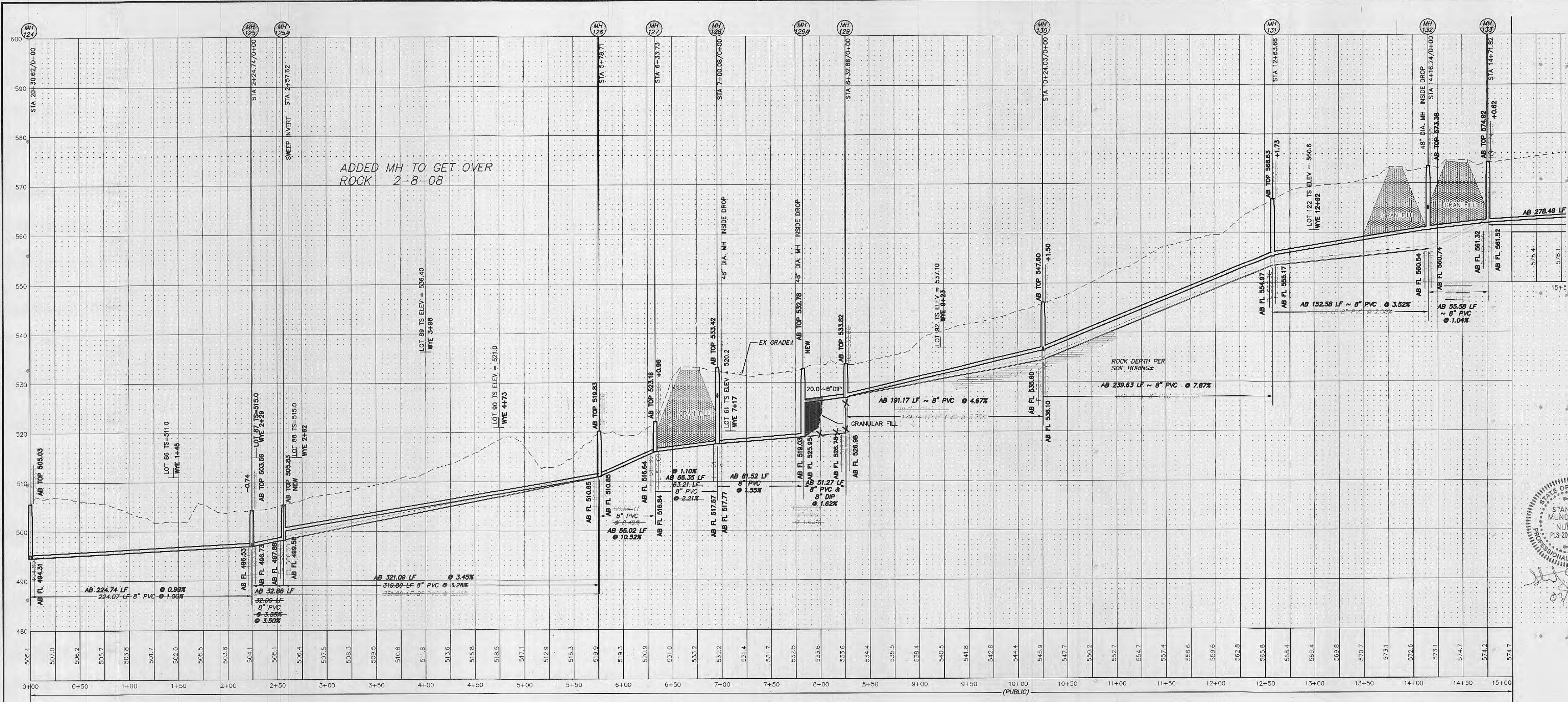
NO.	DATE	PER CITY COMMENTS
1	7-18-05	PER CITY SHOW 0.2' DROP IN MH'S
2	8-16-05	PER CITY SHOW 0.2' DROP IN MH'S
3	12-29-06	PER CITY LETTERS 12/09/06

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PICKETT, RAY & SILVER, INC.

DRAWN	MK	DATE	01/04/04
CHECKED	DST	DATE	01/04/04
PROJECT	# 83064-STCC.00R	FIELD BOOK	

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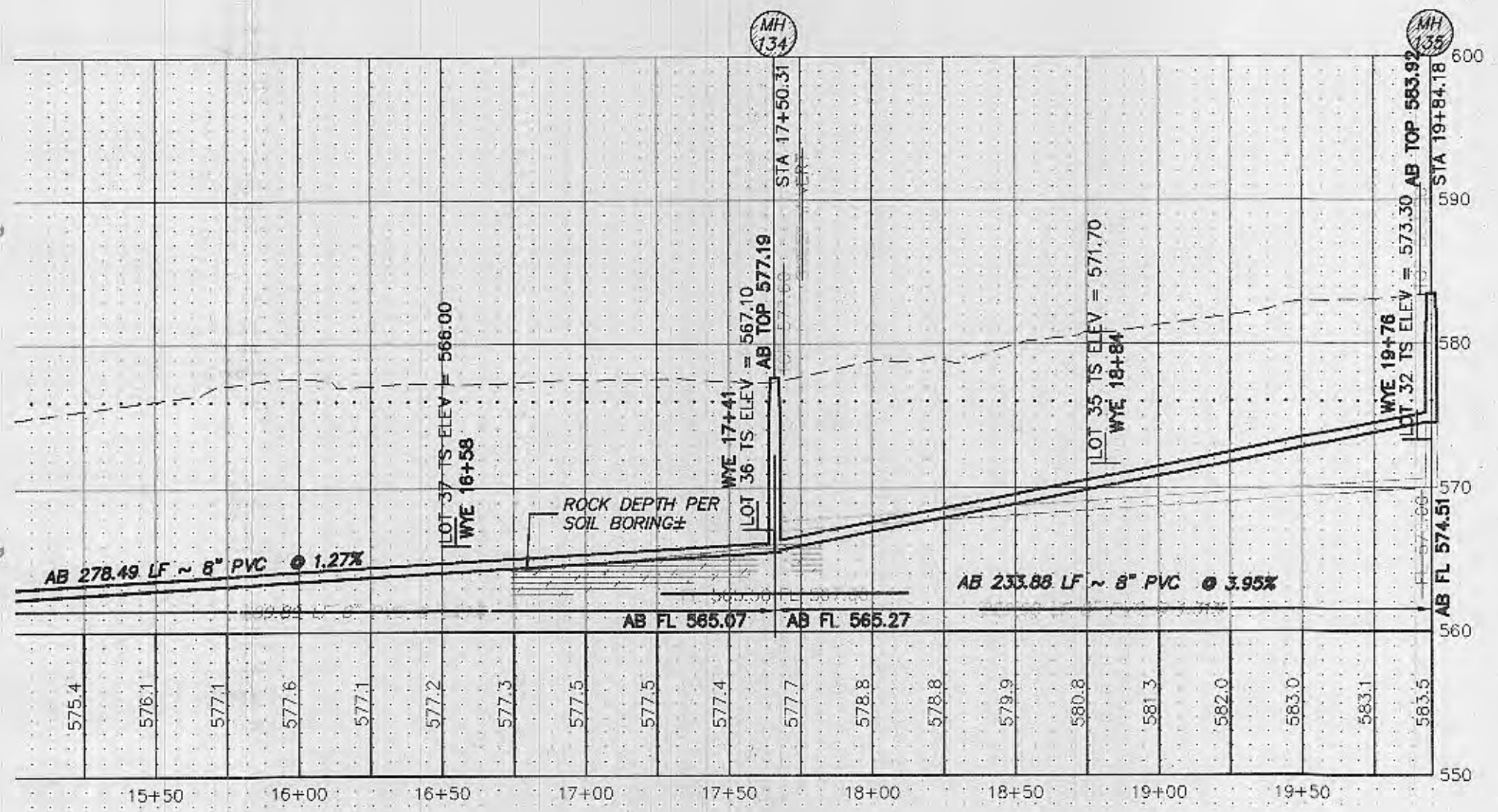


STANLEY M. MUNDWILLER
 MISSOURI PROFESSIONAL LAND SURVEYOR
 No. 03704
 03/04/09

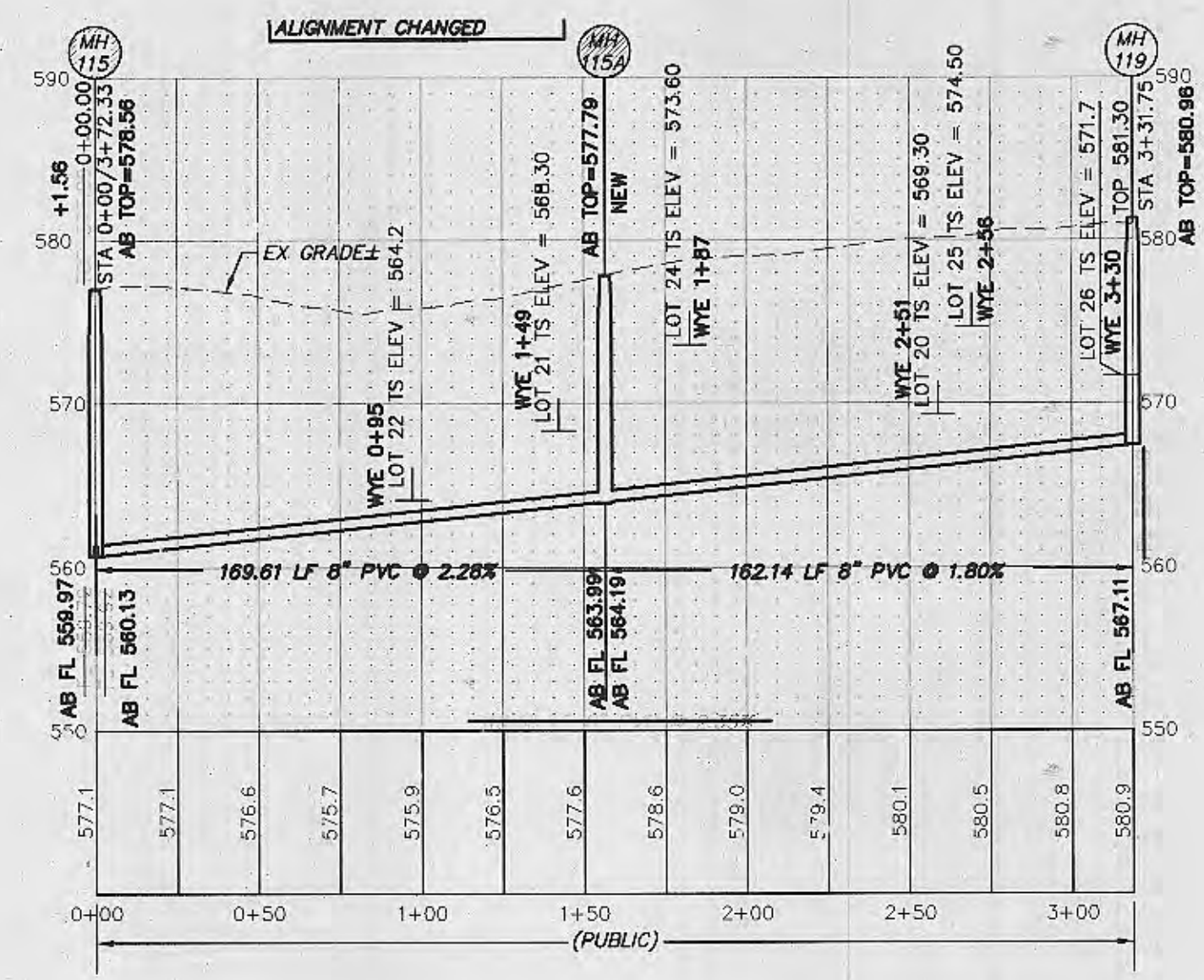
AS-BUILTS

WYE LOCATIONS PROVIDED BY CONTRACTOR

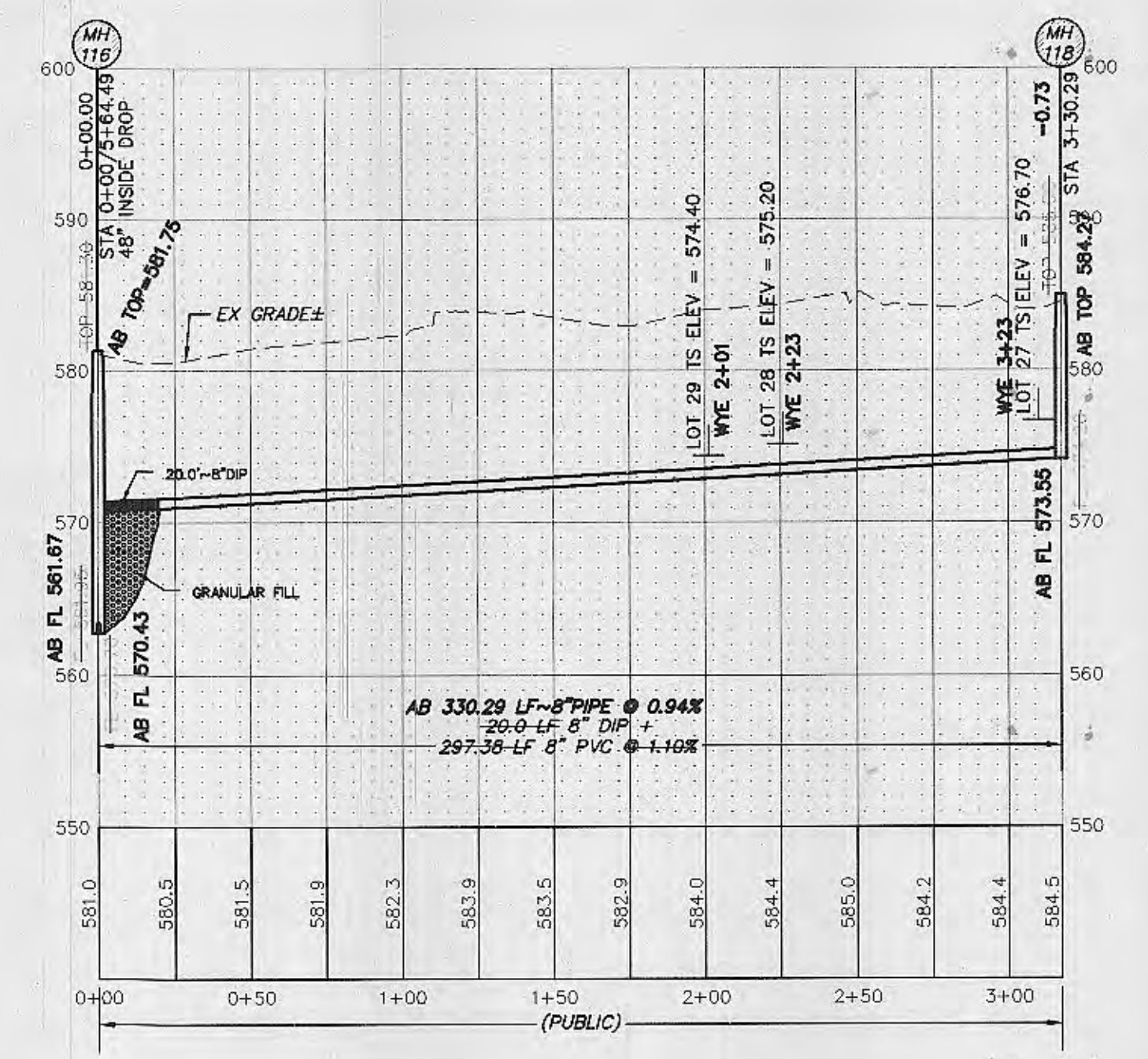
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SCALE: HORIZONTAL 1"=50'
 VERTICAL 1"=10'

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ST. CHARLES COUNTY

REVISIONS	NO.	DATE	PER CITY COMMENTS
	1	7-18-05	PER CITY SHOW 0.2' DROP IN MHS
	2	8-16-05	PER CITY LETTER 12/06/06
	3	12-19-06	PER CITY LETTER 12/06/06
	4	4-13-07	T.S. LOT 80

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DRAWN	MK	DATE
		01/04/04

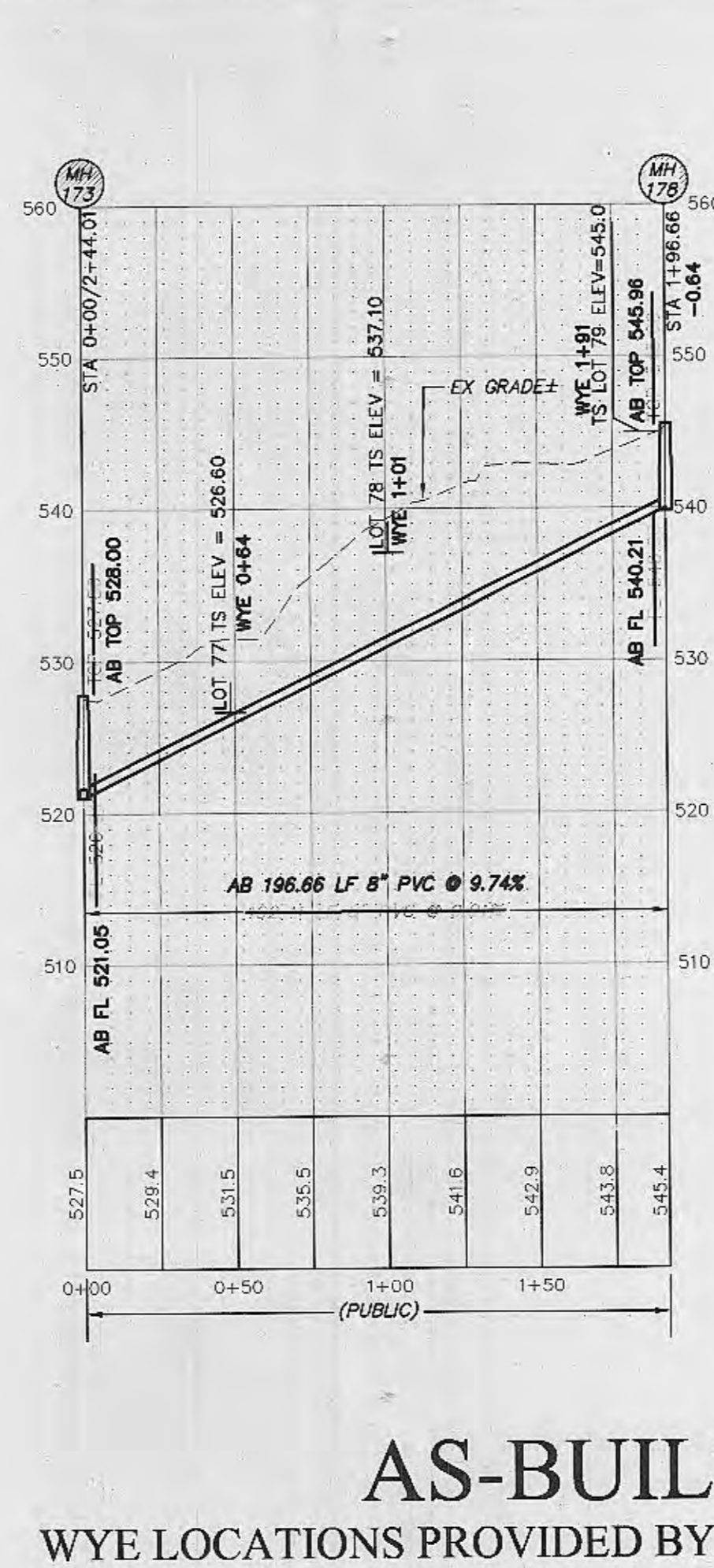
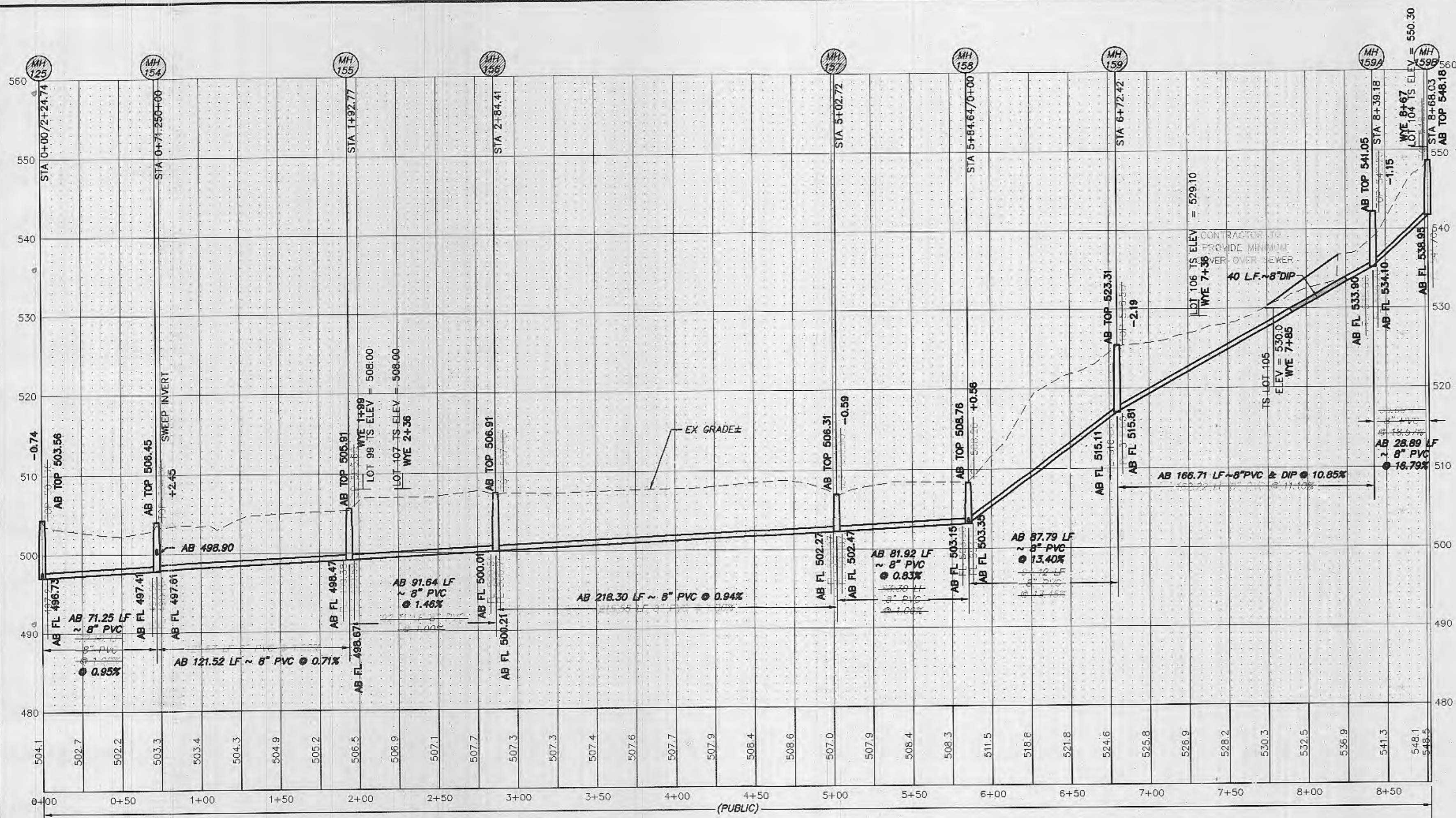
CHECKED	DST	DATE
		01/04/04

PROJECT # 83054.STCC.00R
 TASK # 1 FIELD BOOK

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VERTICAL 1"=10'

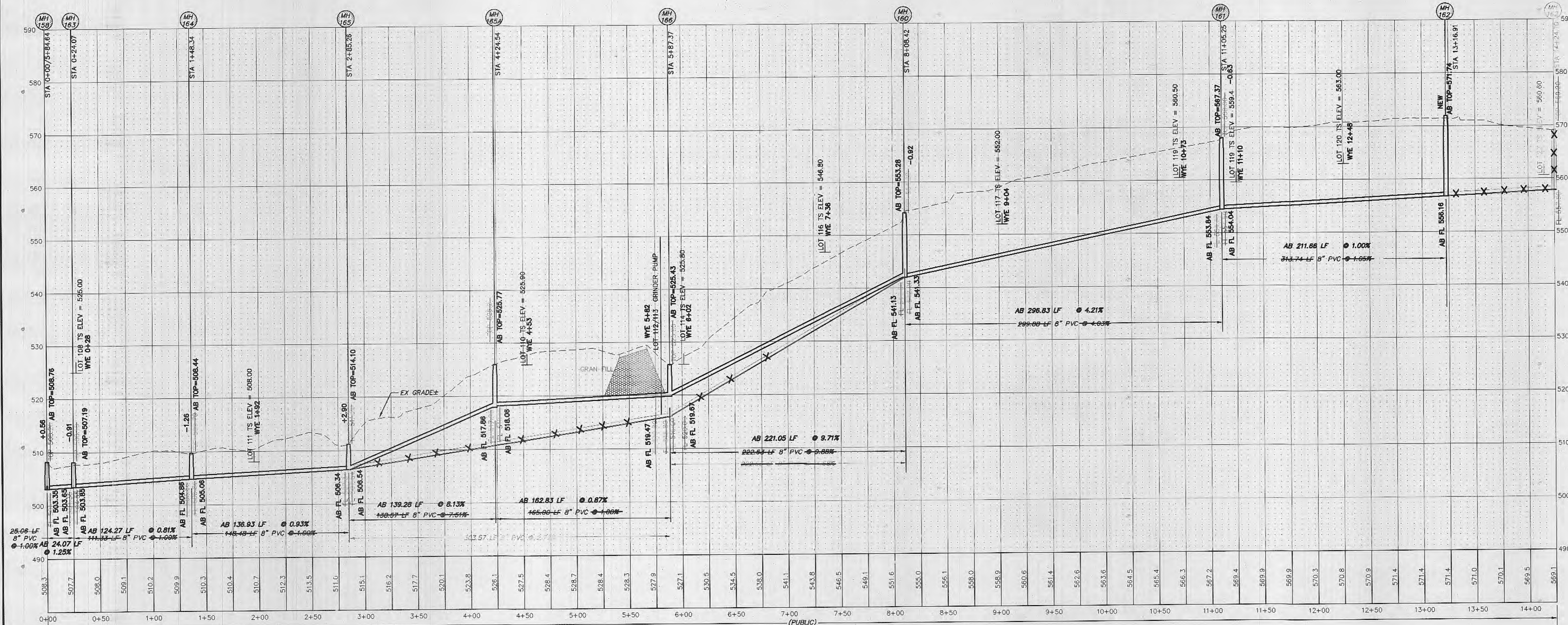
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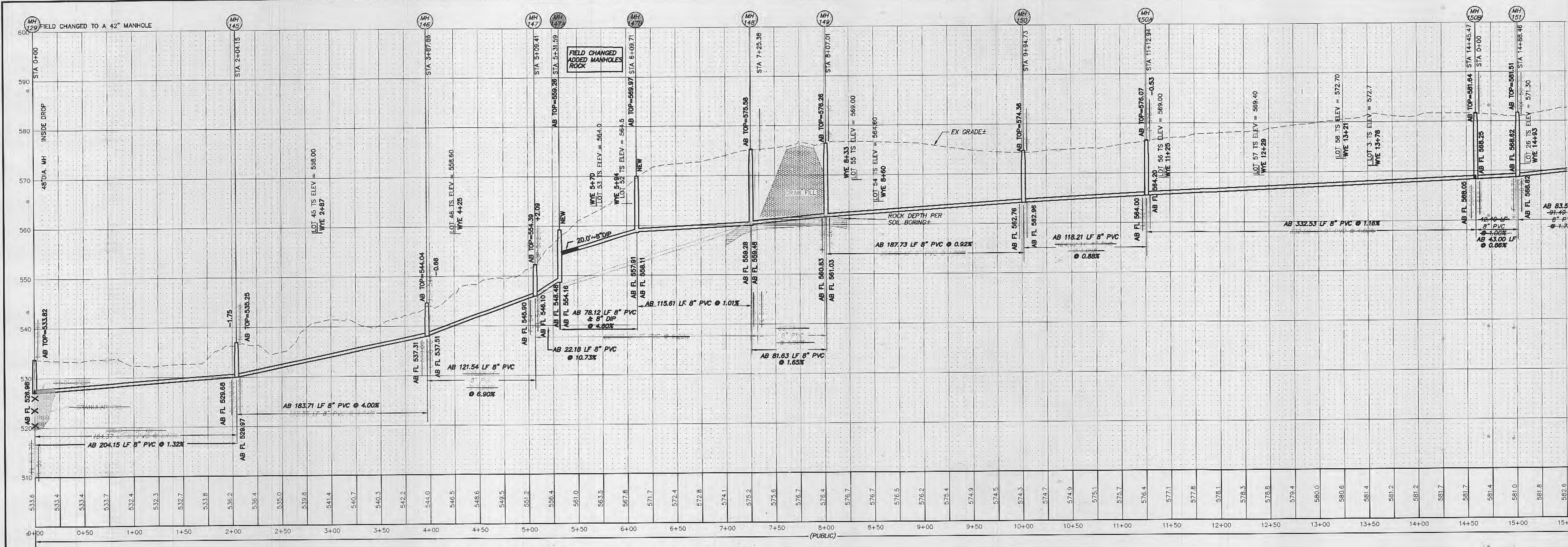
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REVISIONS NO.	DATE	PER CITY COMMENTS
1	7-18-06	PER CITY SHOW 0.2' DROP IN MHS
2	8-16-06	

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PROJECT #	83054-STCC-00R		
TASK #	1		
	FIELD	BOOK	



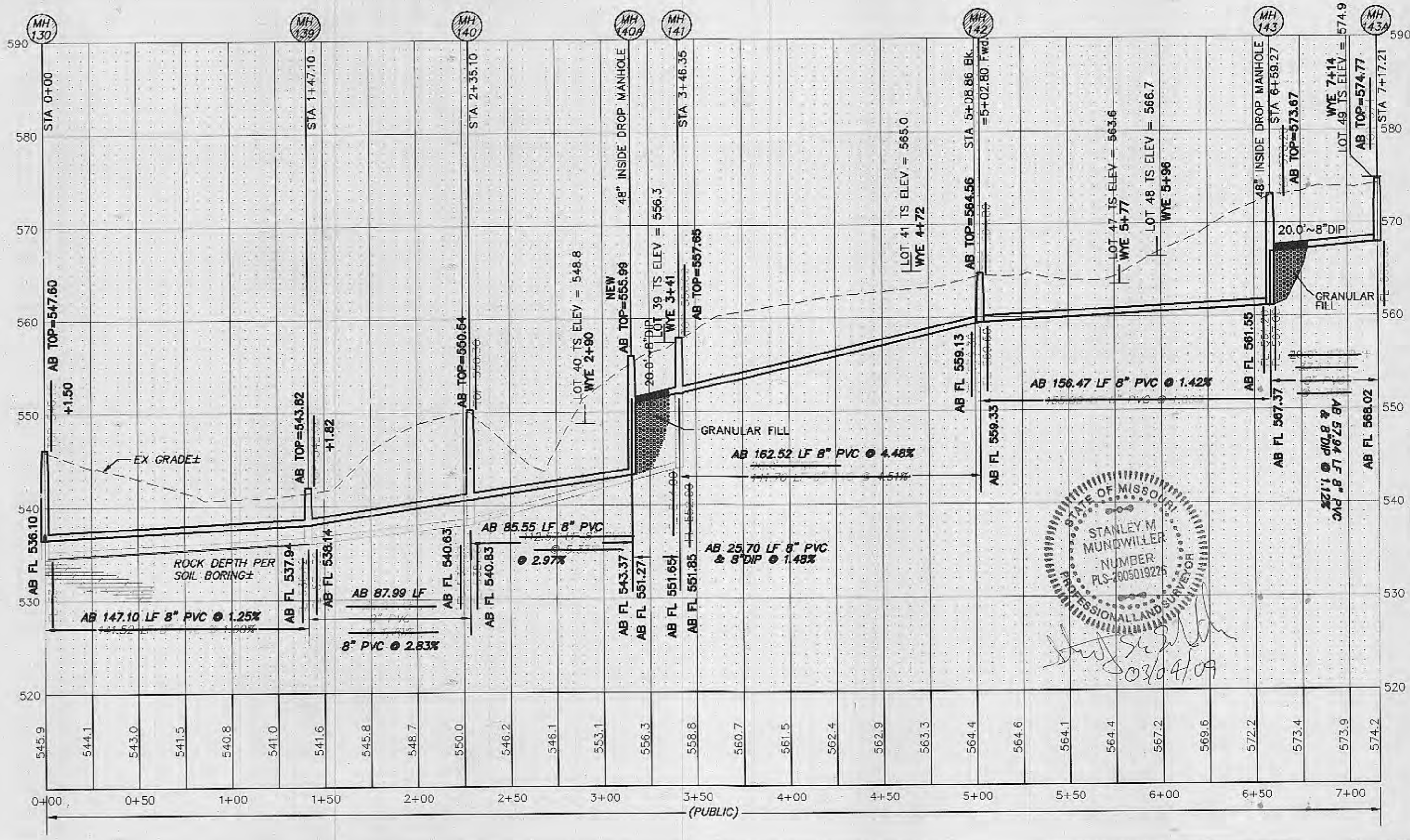
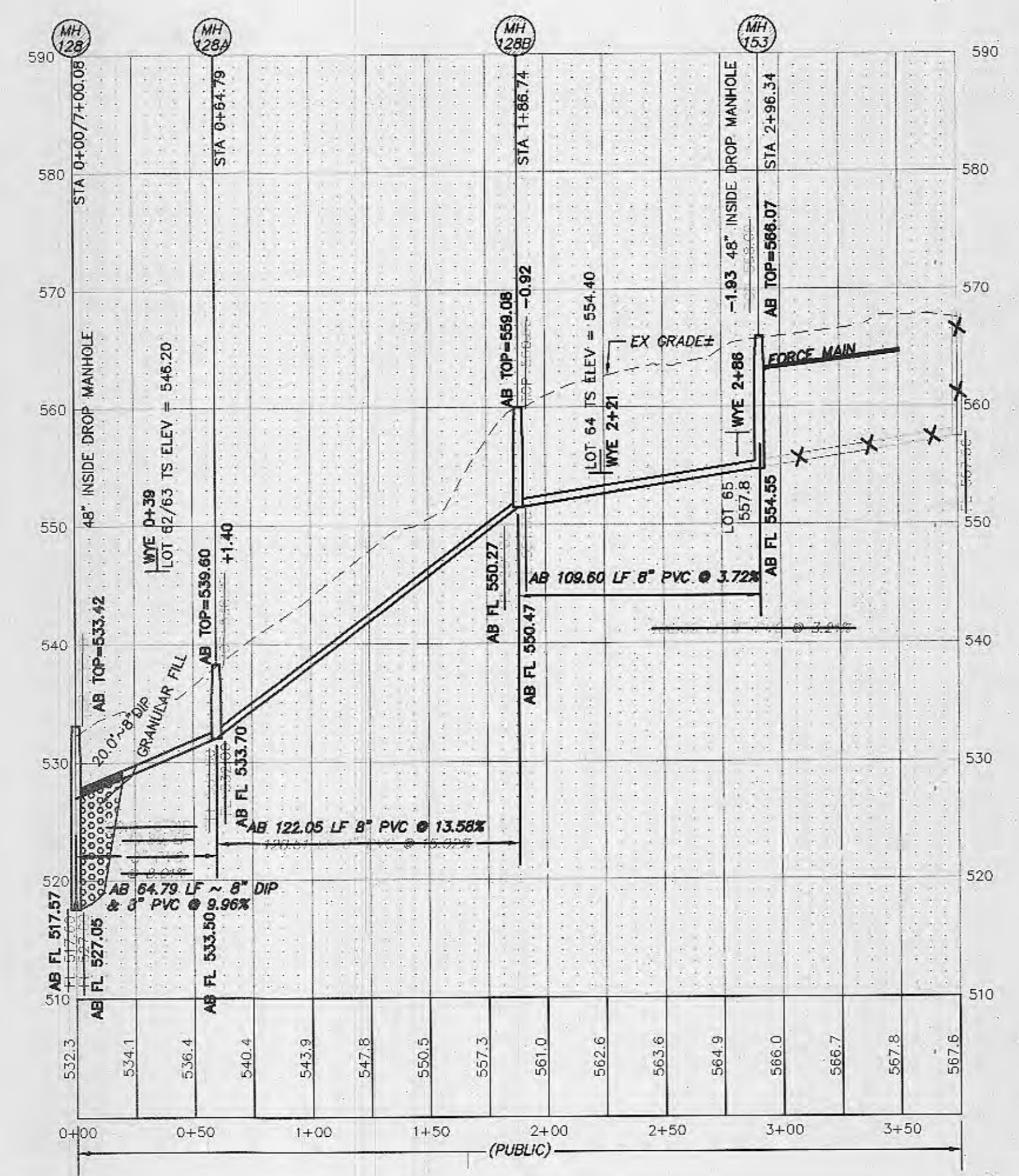
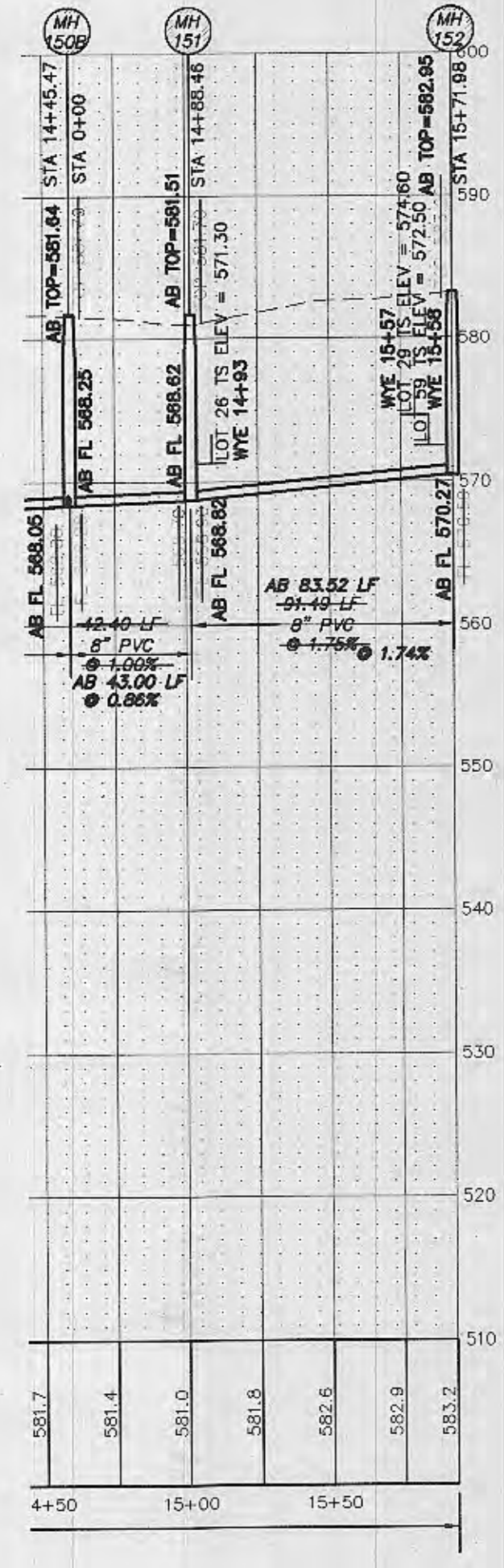
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 SANITARY SEWER PROFILES
 Prepared For:
ST. CHARLES COUNTY
 Mt. Charles Feldman
 St. Charles County Gov't
 201 N. Second St., Suite 420
 St. Charles, MO 63041
 Tel: (636) 440-7564
 Fax: (636) 449-7336

REVISIONS NO.	DATE	PER CITY COMMENTS
1	7-18-05	PER CITY SHOW 0.2' DROP IN MHS
2	8-16-05	PER CITY SHOW 0.2' DROP IN MHS
3	2-02-07	PER CITY LETTER 1/18/07

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 STANLEY M. MUNDWILLER
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 NUMBER PLS-2005018228

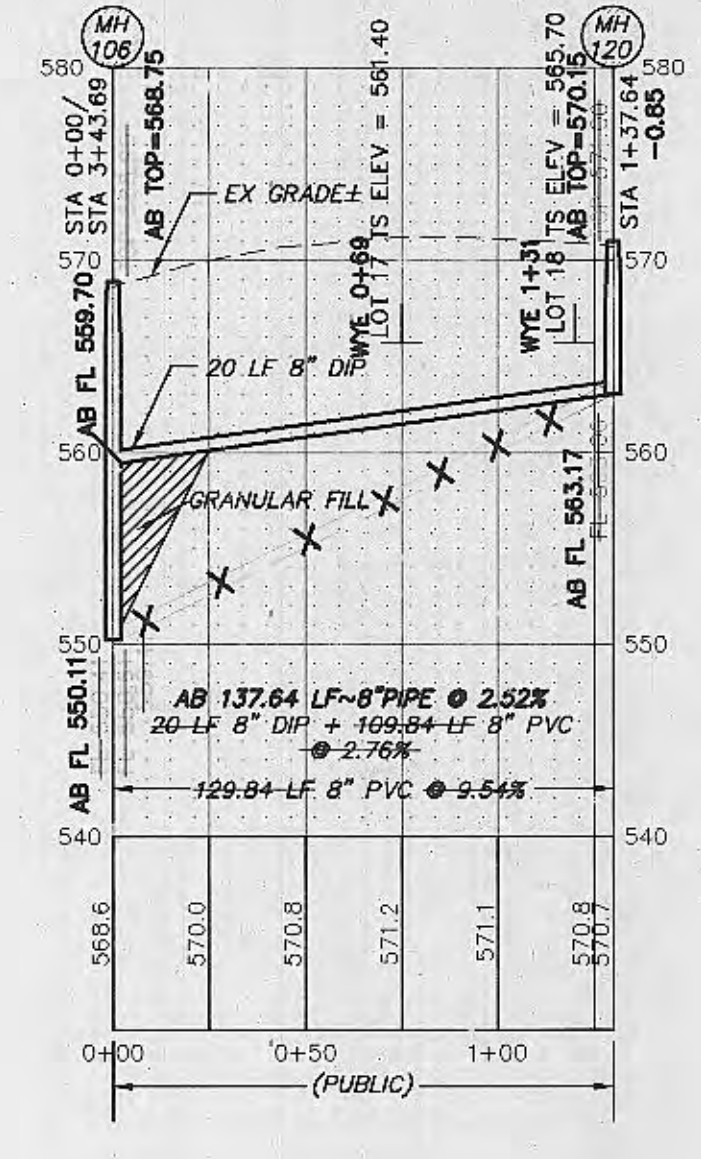
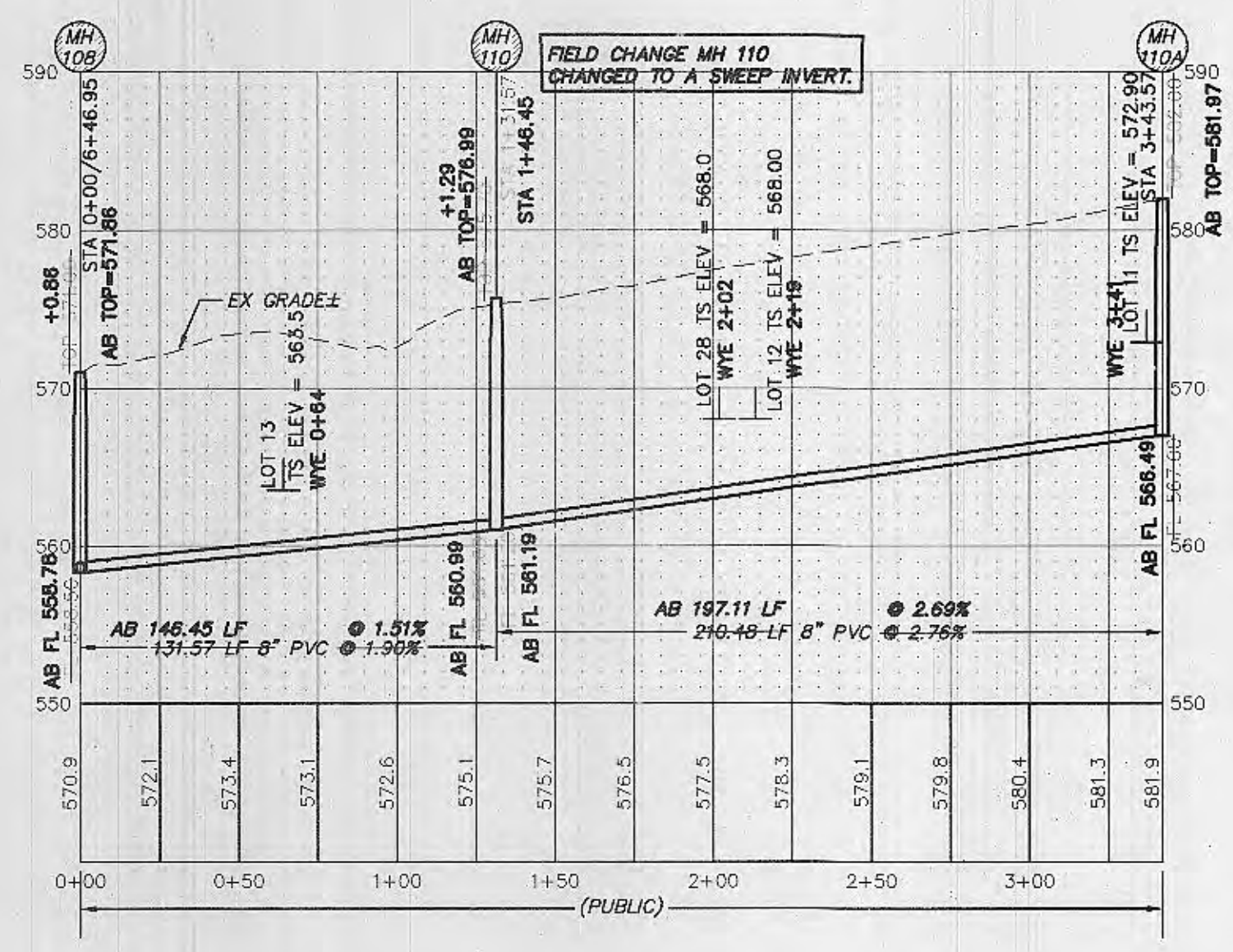
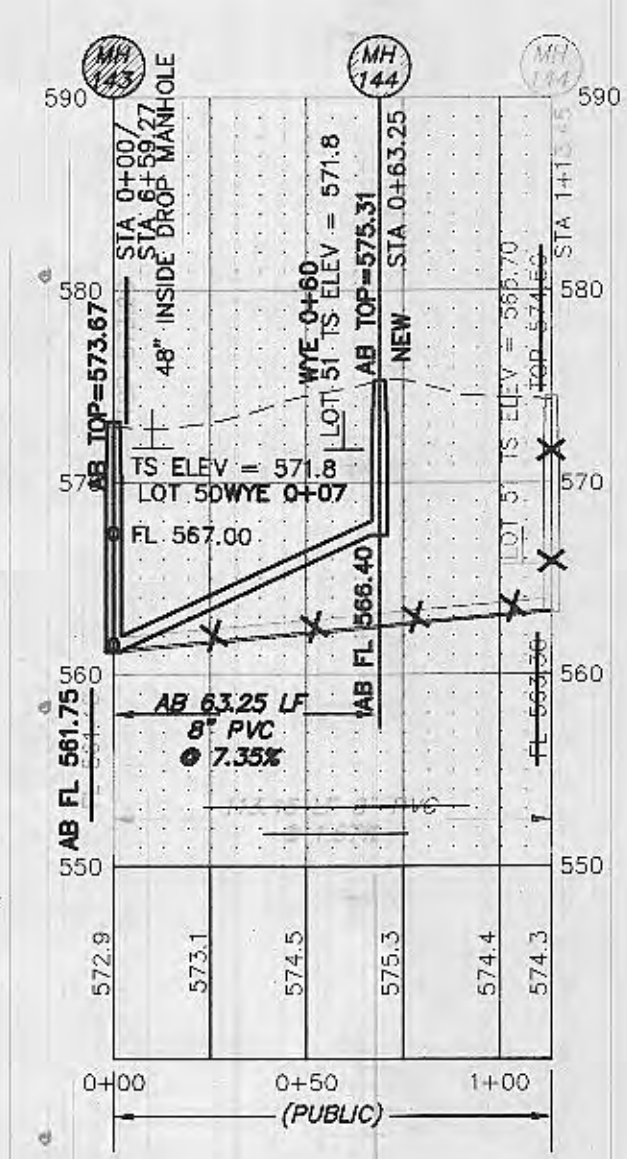
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 PROJECT # 83054.STCC.OOR
 TASK # 1 FIELD BOOK

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 SHEET **13** OF **21**
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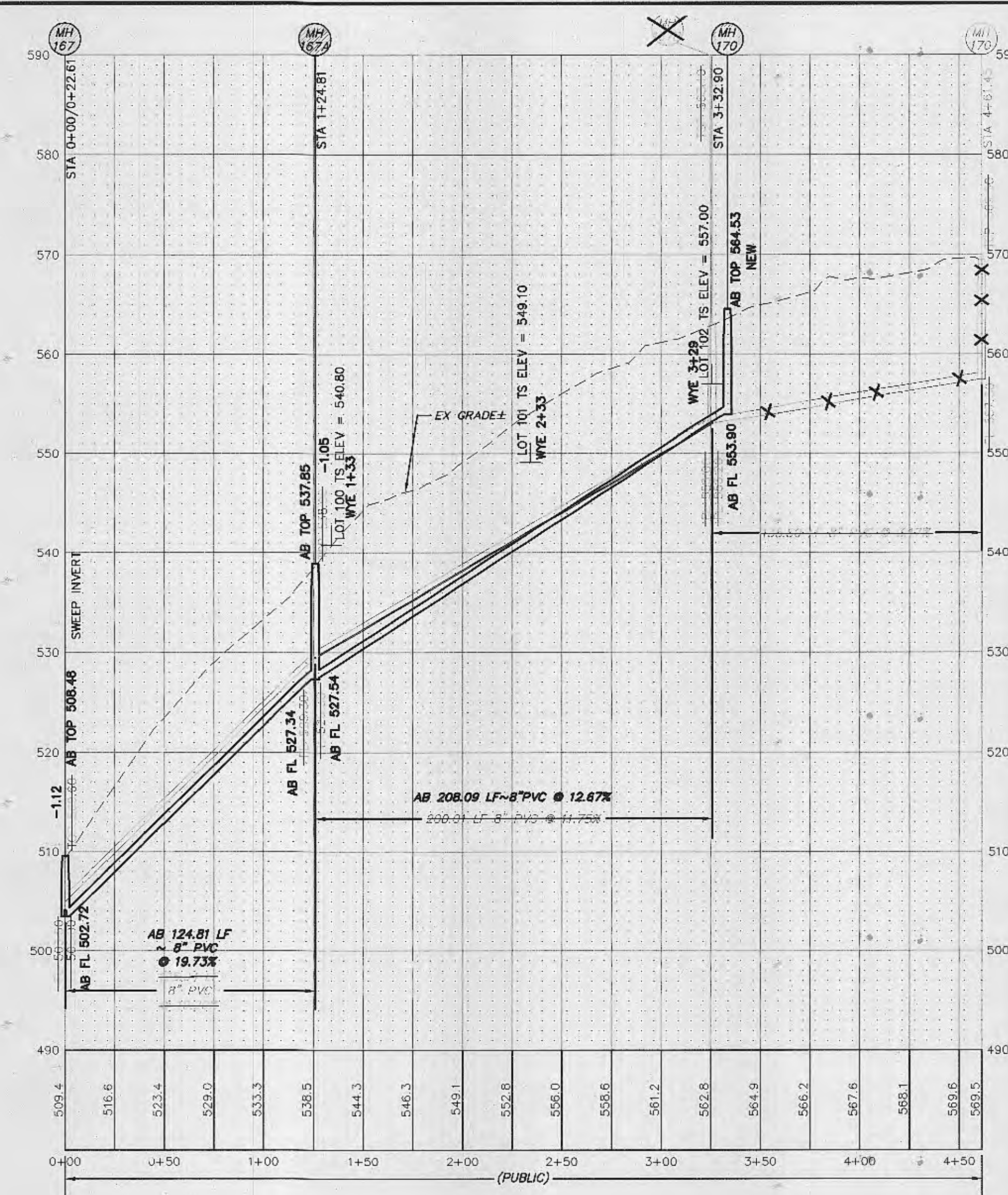
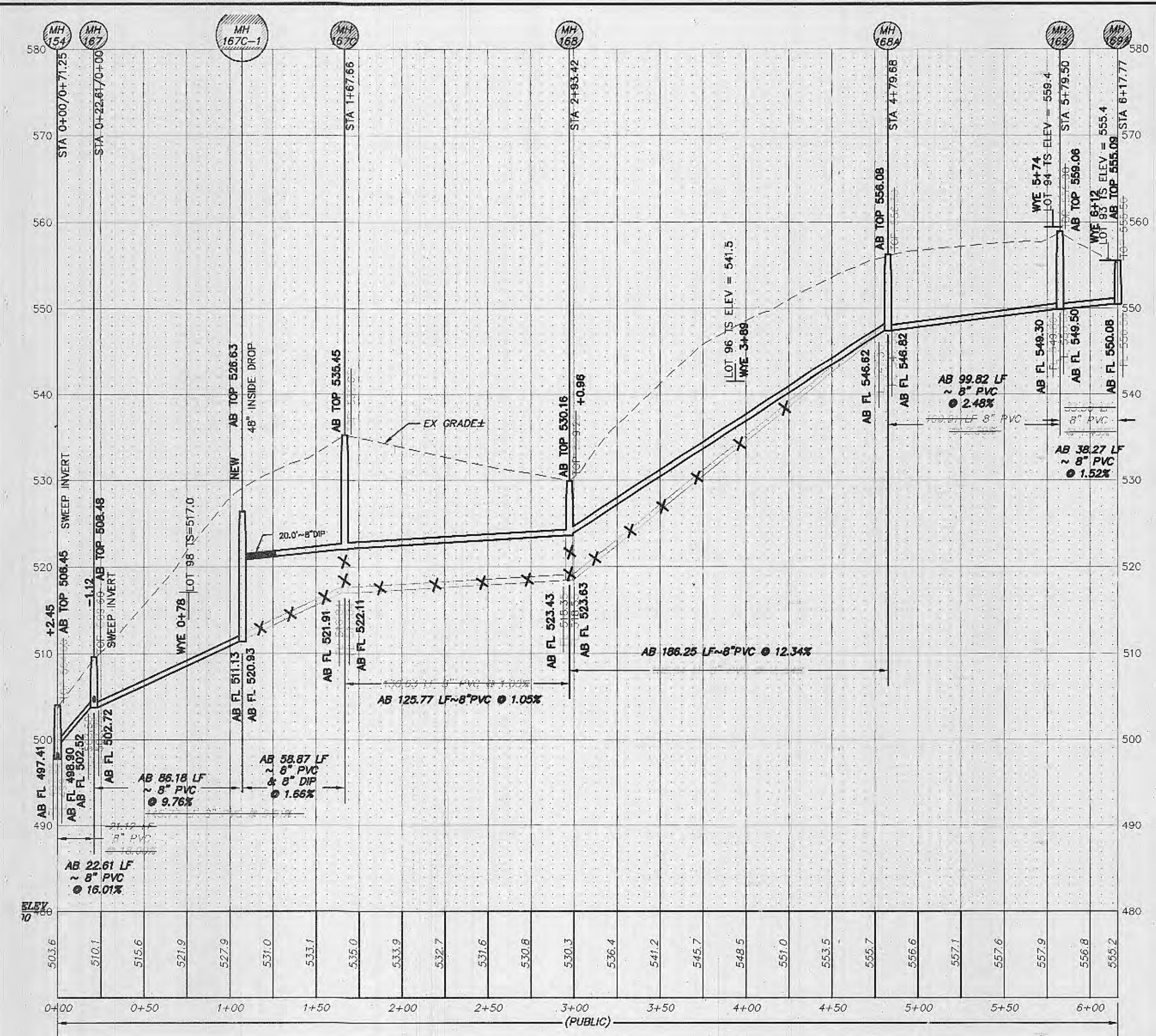
AS-BUILTS

WYE LOCATIONS PROVIDED BY CONTRACTOR

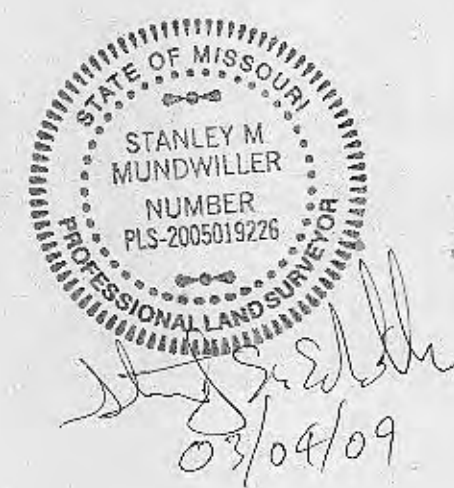


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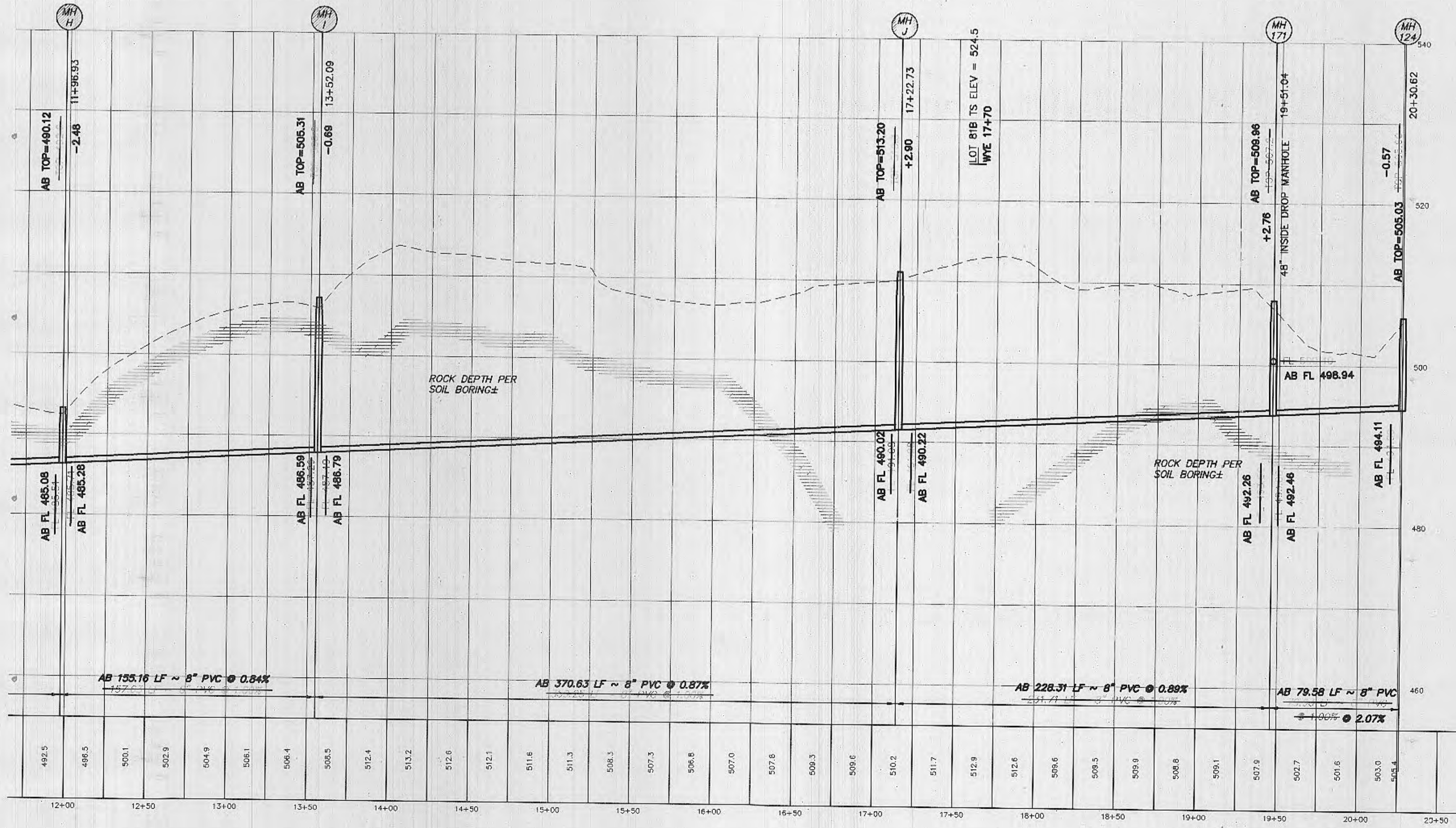
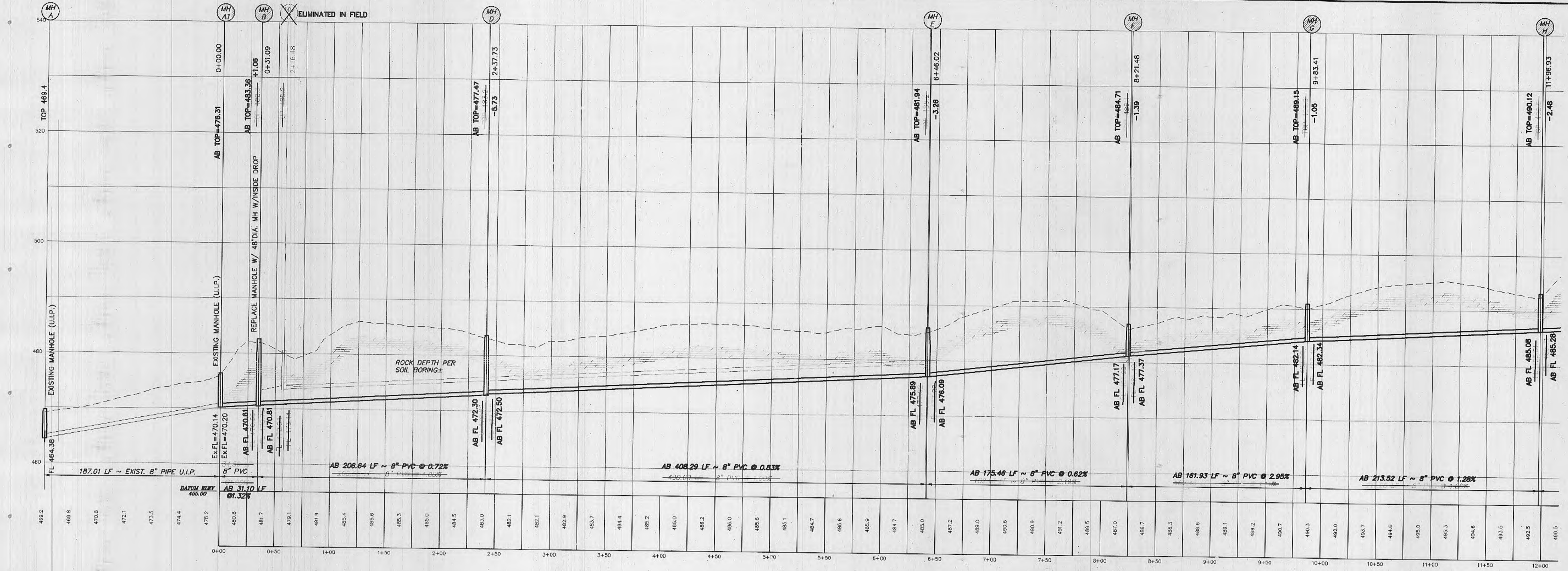
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ST. CHARLES COUNTY
Mr. Charles Falkman
St. Charles County Gov't
20 N. Second St., Suite 420
St. Charles, MO 63301
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Fax: 636-949-7336

REVISIONS	NO.	DATE	PER CITY COMMENTS
	1	7-18-05	PER CITY SHOT 0.2' DROP IN MH'S
	2	8-16-05	PER CITY SHOT 0.2' DROP IN MH'S

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SHEET 14 OF 21
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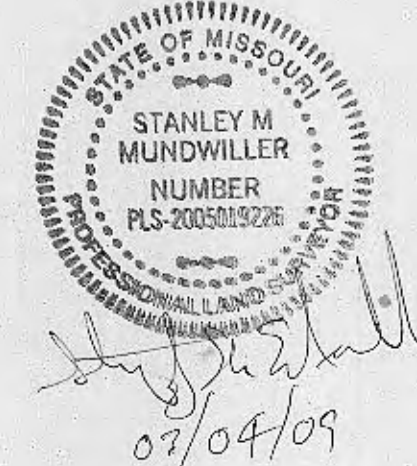


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VERTICAL 1"=10'

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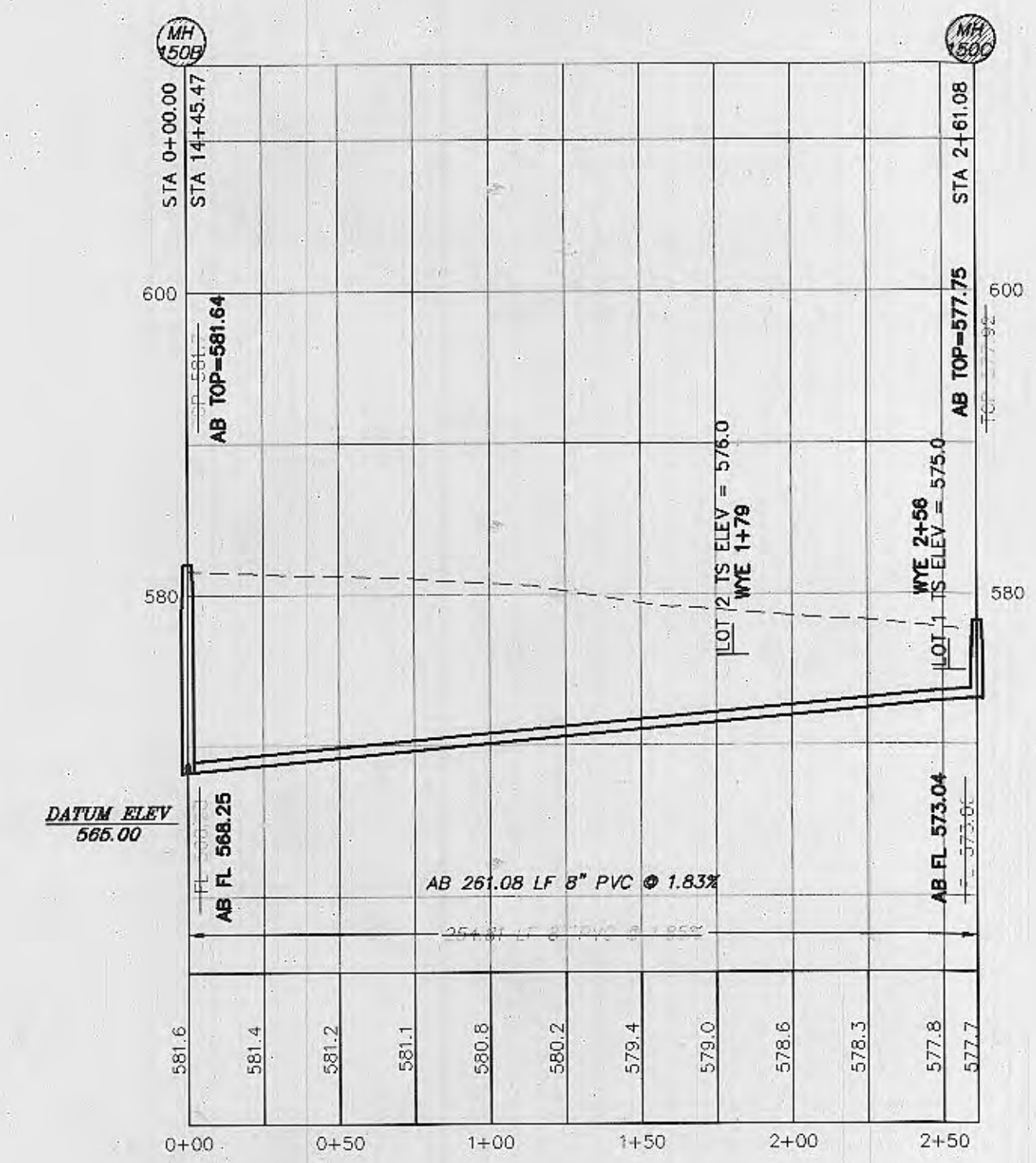
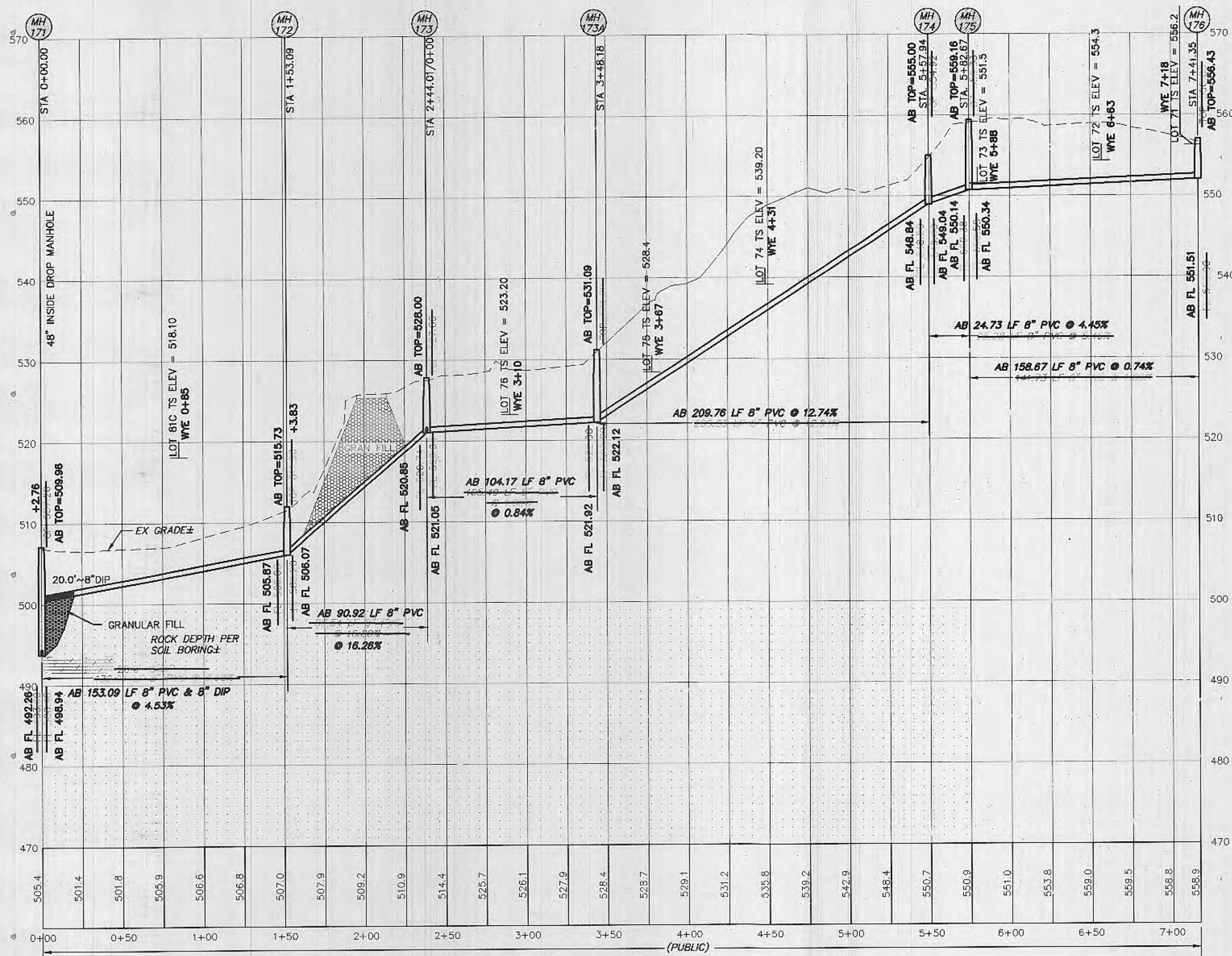
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Mr. Charles Feldman
St. Charles County Gov.
20 N. State Street, Suite 220
St. Charles, MO 63301
Tel: 636-949-7564
Fax: 636-949-7556

REVISIONS	NO.	DATE	PER CITY COMMENTS
	1	7-18-05	PER CITY
	2	8-18-05	PER CITY SHOW 0.2' DROP IN MHS

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TASK #	1	FIELD BOOK	

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SHEET **15** OF **21**
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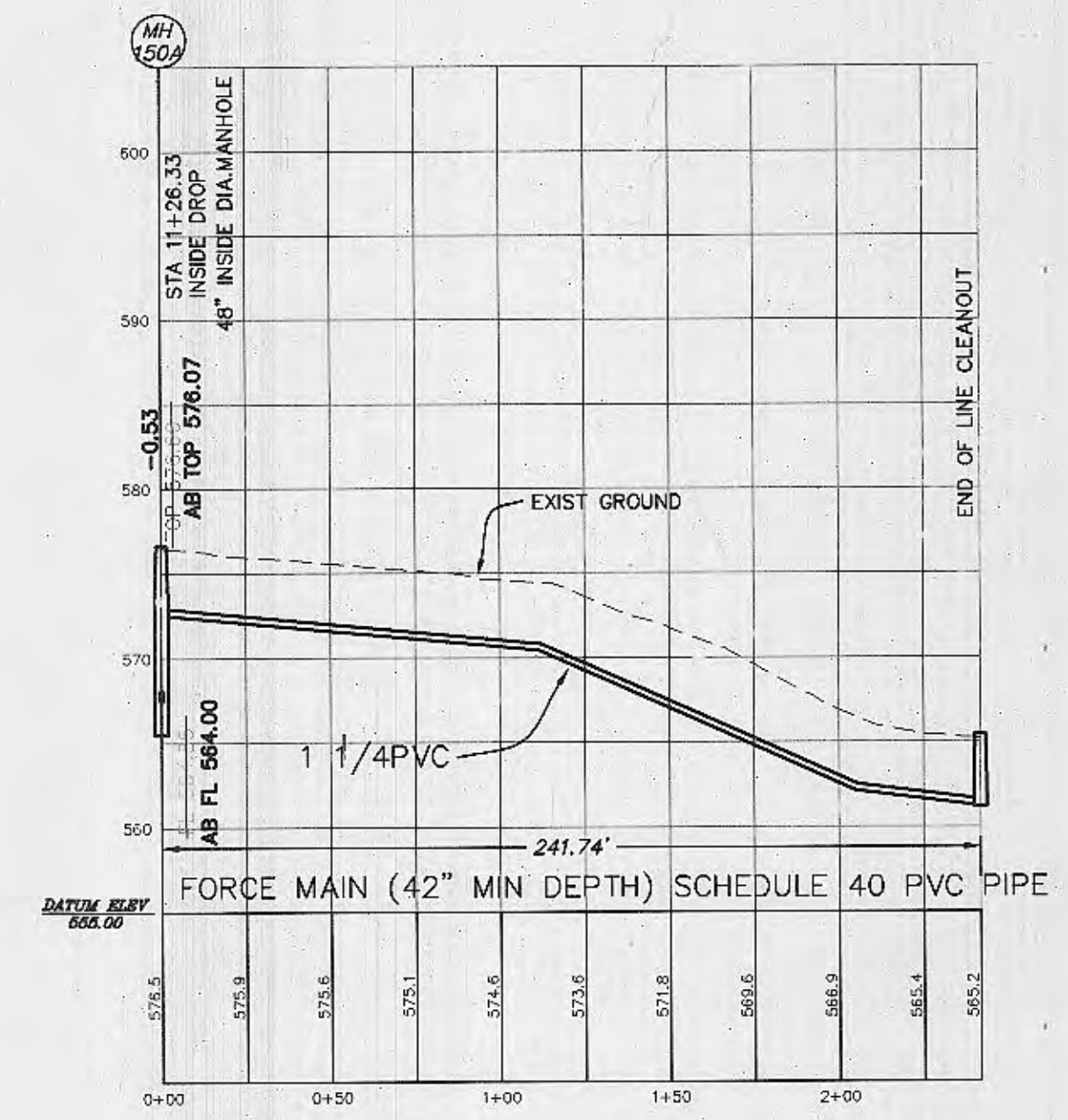
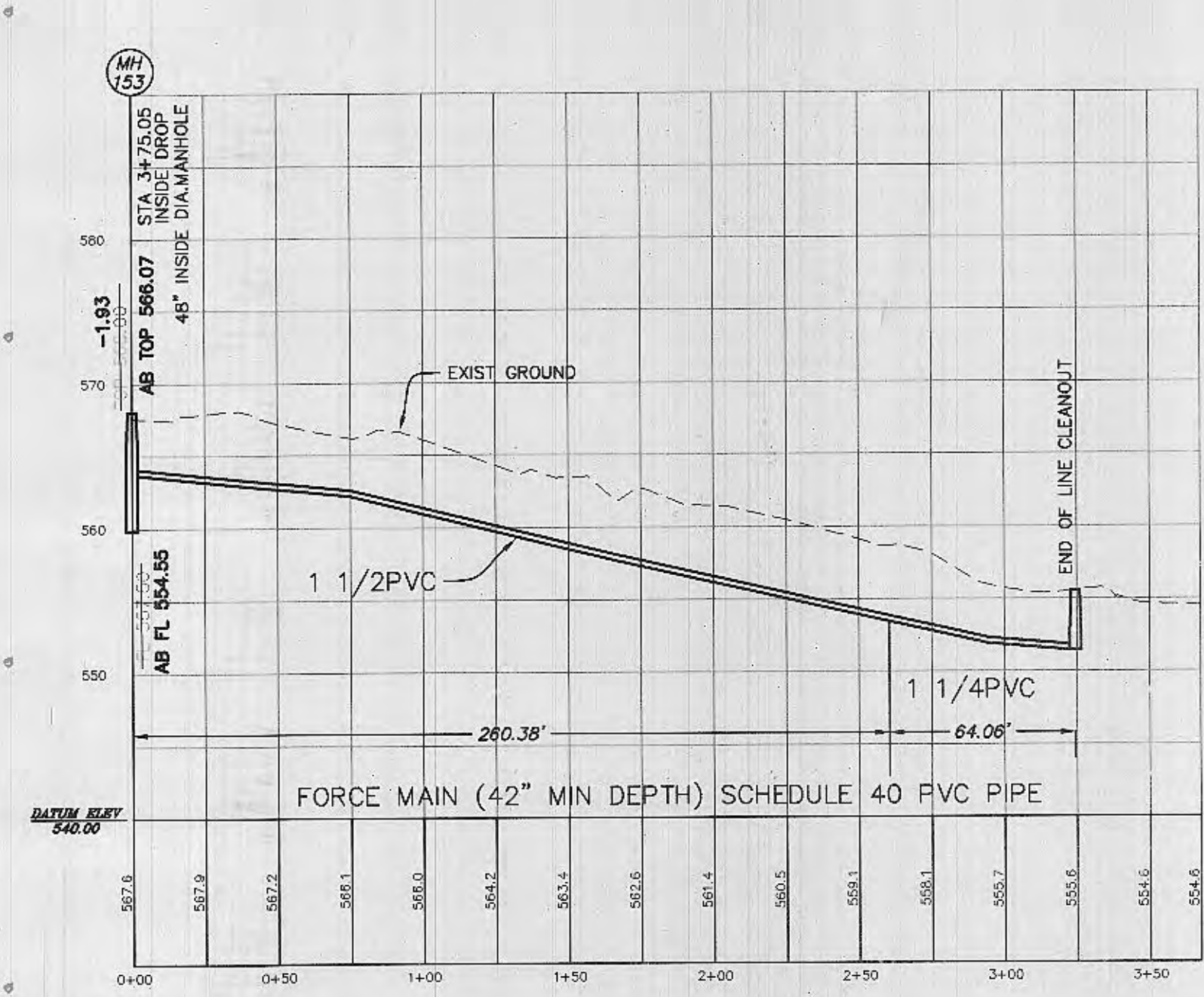
SITE NOTE:
 LATERAL LOCATIONS ARE APPROXIMATE. WYE LOCATIONS TO BE DETERMINED IN THE FIELD AT THE TIME OF CONSTRUCTION. ALL LATERALS WILL BE FIELD LOCATED AND SHOWN ON THE AS-BUILT PLANS. CONTRACTOR IS RESPONSIBLE FOR STATIONING WYES.


Call BEFORE you DIG
 TOLL FREE
1-800-344-7483
 MISSOURI ONE-CALL SYSTEM, INC.

UTILITY NOTE:
 UNDERGROUND FACILITY STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORDED INFORMATION AND, THEREFORE, THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. VERIFICATION OF LOCATION OF ALL UNDERGROUND STRUCTURES AND FACILITIES EITHER SHOWN OR NOT SHOWN ON THESE PLANS, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

AS-BUILTS

WYE LOCATIONS PROVIDED BY CONTRACTOR



LAKE CHARLES HILLS NEIGHBORHOOD IMPROVEMENT DISTRICT
 ANALYSIS OF LOW PRESSURE SEWER SYSTEM WITH PIPE SCHEDULE 40 PVC PIPE

Branch No.	No. of Pumps	Accum. Total	Max. On	Max. Flow (gpm)	Pipe Size (in)	Max. Velocity (ft/sec)	Length (ft)	Friction Loss (ft/100 ft)	Friction Loss Total (ft)	Accum. Friction Loss (ft)	Max. Main Elev. (ft)	Minimum Pump Elev. (ft)	Elev. Diff. (ft)	Max. Total Head (ft)
1	2	2	2	22	1.25	4.72	290.00	6.28	18.212	18.212	574	568	6	24.212

This table based on 200 gallons of usage per dwelling unit.

Branch No.	Accum. No. of Pumps	Pipe Size (in)	Gal Per 100 Lineal Feet	Length (ft)	Capacity of Branch	Average Daily Flow	Average Fluid Changes Per Day	Average Retention Time (hr)	Accum. Retention Time (hr)
1	2	1.25	7.8	290	22.62	400	17.68	1.36	1.36

LAKE CHARLES HILLS NEIGHBORHOOD IMPROVEMENT DISTRICT
 ANALYSIS OF LOW PRESSURE SEWER SYSTEM WITH PIPE SCHEDULE 40 PVC PIPE

Branch No.	No. of Pumps	Accum. Total	Max. On	Max. Flow (gpm)	Pipe Size (in)	Max. Velocity (ft/sec)	Length (ft)	Friction Loss (ft/100 ft)	Friction Loss Total (ft)	Accum. Friction Loss (ft)	Max. Main Elev. (ft)	Minimum Pump Elev. (ft)	Elev. Diff. (ft)	Max. Total Head (ft)
1	1	1	1	11	1.25	2.36	107.00	1.74	1.862	11.006	564	542	22	33.006
2	1	2	2	22	1.50	3.47	102.00	2.97	3.029	9.144	564	548	16	25.144
3	1	3	2	22	1.50	3.47	100.00	2.97	2.970	6.115	564	557	7	13.115
4	1	4	3	33	1.50	5.20	50.00	6.29	3.145	3.145	564	560	4	7.145

This table based on 200 gallons of usage per dwelling unit.

Branch No.	Accum. No. of Pumps	Pipe Size (in)	Gal Per 100 Lineal Feet	Length (ft)	Capacity of Branch	Average Daily Flow	Average Fluid Changes Per Day	Average Retention Time (hr)	Accum. Retention Time (hr)
1	1	1.25	7.8	107	8.35	200	23.96	1.00	2.23
2	2	1.50	10.6	102	10.31	400	37.00	0.85	1.23
3	3	1.50	10.6	100	10.00	600	56.60	0.42	0.58
4	4	1.50	10.6	50	5.30	800	150.94	0.16	0.16



SCALE: HORIZONTAL 1"=50'
 VERTICAL 1"=10'

PICKETT RAY & SILVER
 CIVIL ENGINEERS
 PLANNERS
 LAND SURVEYORS
 333 Mid Rivers Mall Drive
 St. Peters, MO 63376
 Phone (636) 397-1211
 Fax (636) 397-1104

LAKE CHARLES HILLS N.I.D.
 IMPROVEMENT PLANS
 SANITARY SEWER PROFILES
 Prepared For:
ST. CHARLES COUNTY

LAKE CHARLES HILLS NEIGHBORHOOD IMPROVEMENT DISTRICT
 ANALYSIS OF LOW PRESSURE SEWER SYSTEM WITH PIPE SCHEDULE 40 PVC PIPE

Branch No.	No. of Pumps	Accum. Total	Max. On	Max. Flow (gpm)	Pipe Size (in)	Max. Velocity (ft/sec)	Length (ft)	Friction Loss (ft/100 ft)	Friction Loss Total (ft)	Accum. Friction Loss (ft)	Max. Main Elev. (ft)	Minimum Pump Elev. (ft)	Elev. Diff. (ft)	Max. Total Head (ft)
1	2	2	2	22	1.25	4.72	290.00	6.28	18.212	18.212	574	568	6	24.212

ENGINEERS AUTHENTICATION
 The responsibility for professional engineering liability on this project is hereby limited to the set of plans authenticated by the seal, signature, and date hereunder attached. Responsibility is disclaimed for all other engineering plans involved in this project and specifically excludes revisions after this date unless reauthenticated.
PICKETT, RAY & SILVER, INC.

REVISIONS NO.	DATE	PER CITY COMMENTS
1	7-18-05	PER CITY SHOW 0.2' DROP IN MHS
2	8-16-06	PER CITY LETTER 1/18/07
3	2-02-07	FORCER MAIN
4	4-13-07	

DRAWN MK DATE 01/04/04
 CHECKED DST DATE 01/04/04
 PROJECT # 83064.STCC.00R
 TASK # 1 FIELD BOOK
 LAKE CHARLES HILLS N.I.D.
 IMPROVEMENT PLANS
 SANITARY SEWER PROFILES
 SHEET 16 OF 21
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