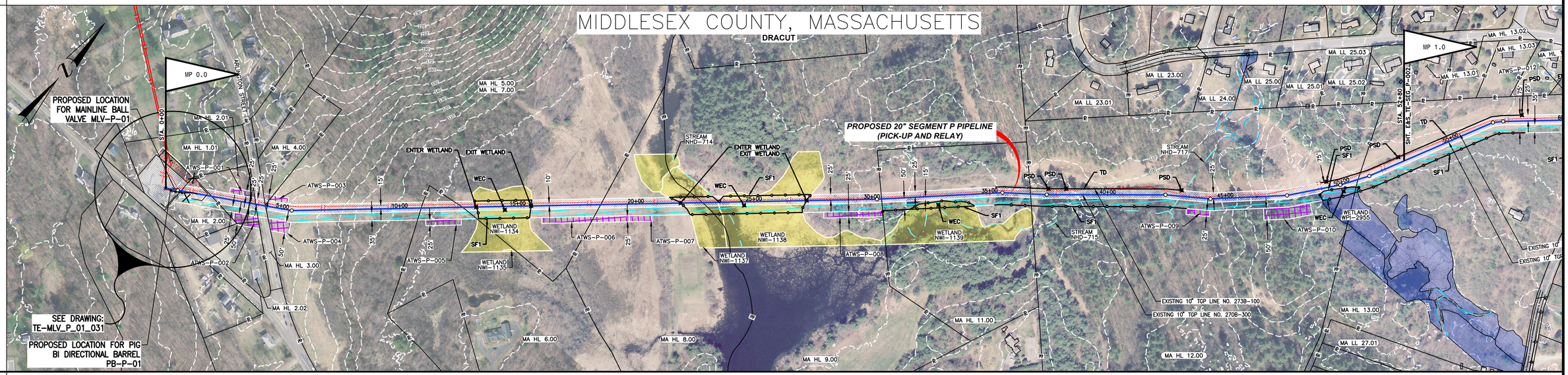
PROTECTION EASEMENT

LINE LIST

PIPELINE STATIONING

ALIGNMENT STRIP MAP



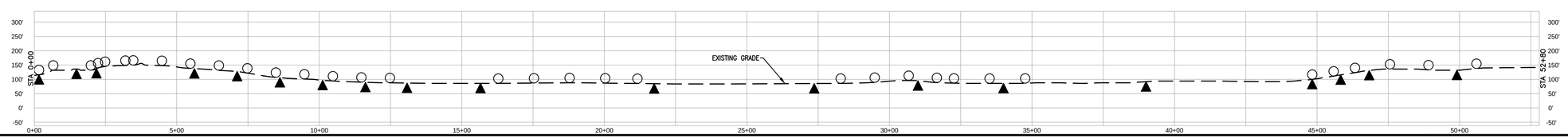
MATERIAL

COATING

DESIGN FACTOR

CLASS LOCATION

PROFILE



ENVIRONMENTAL

SOILS

PROFILE LEGEND

SLOPE BREAKERS

TRENCH PLUG

NOTES

1. EXISTING TENNESSEE GAS PIPELINE PERMANENT EASEMENTS ARE NOT DEPICTED IN THEIR ENTIRETY.
2. PUBLIC WETLANDS ARE OBTAINED FROM THE NATIONAL WETLAND INVENTORY (NWI) (AS DEFINED IN RESOURCE REPORT 2.3)
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LEGEND

LIMITS OF DISTURBANCE:
- EXISTING PERMANENT EASEMENT
- PROPOSED PERMANENT EASEMENT
- TEMPORARY WORKSPACE
- ADDITIONAL TEMPORARY WORKSPACE (ATWS)
- POTENTIAL STAGING AREA

- PROPOSED PIPELINE
- EXISTING TENNESSEE GAS PIPELINE
- EXISTING FOREIGN PIPELINE
- OH — OVERHEAD POWER LINE
- F — EXISTING FIBER OPTIC LINE
- PA HG3 400.00 — LINE LIST NUMBER
- R — PROPERTY LINE
- MUNICIPAL LINE
- WETLAND (PUBLIC)
- WETLAND (PHOTO INTERPRETED)
- WETLAND (DELINEATED)
- STREAM (DELINEATED)
- STREAM (PHOTO INTERPRETED)
- STREAM (PUBLIC)
- ACCESS ROAD
- X — FENCE LINE

REFERENCE DRAWINGS

TYPICALS

SCALE

200 100 0 200 400

IMAGERY: APRIL/MAY 2015

REVISIONS

NO	PROJ ID	DESCRIPTION	DATE	BY	CK	APPR
0		ISSUE FOR FERC	11/2015	HMM	HMM	

AREA: | DIV.:
DRAFTER: HMM | DATE: 01-12-15
DRAFT. COORD: HMM | DATE: 01-12-15

Tennessee Gas Pipeline Company, L.L.C.
a Kinder Morgan company

NORTHEAST ENERGY DIRECT PROJECT
PROPOSED 20" PIPELINE
SEGMENT P HAVERHILL LATERAL
EROSION & SEDIMENT CONTROL PLAN
ALIGNMENT SHEET
MIDDLESEX COUNTY, MASSACHUSETTS

DESIGN COORD: | DATE: | SCALE: 1 = 200' | PROJ. ID.:
PROJECT COORD: | DATE:
OPER. APPR: | DATE:

E&S_TE-SEG_P-001 | 0

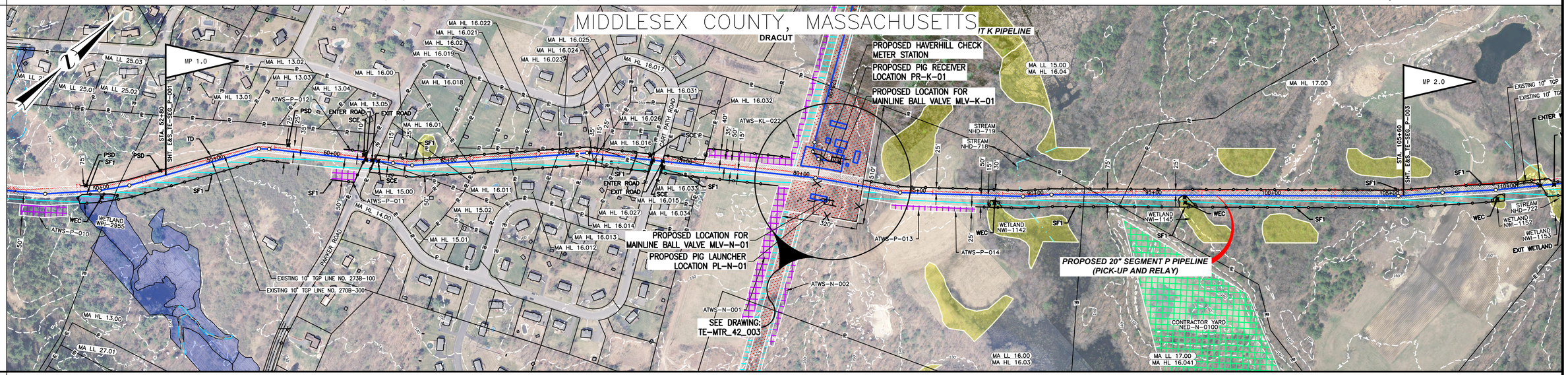
11/6/2015 3:53 PM HMMMCL

PROTECTION EASEMENT

LINE LIST

PIPELINE STATIONING

ALIGNMENT STRIP MAP



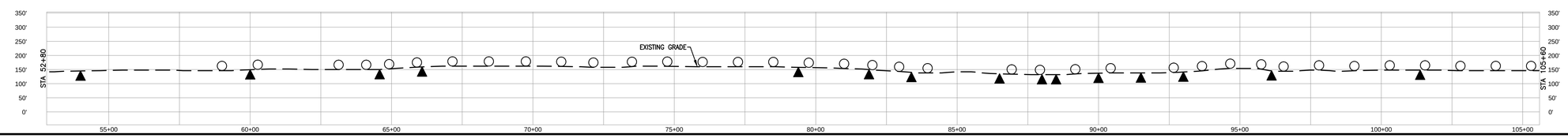
MATERIAL

COATING

DESIGN FACTOR

CLASS LOCATION

PROFILE



ENVIRONMENTAL

SOILS

PROFILE LEGEND

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TRENCH PLUG

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LEGEND

- EXISTING PERMANENT EASEMENT
- PROPOSED PERMANENT EASEMENT
- TEMPORARY WORKSPACE
- ADDITIONAL TEMPORARY WORKSPACE (ATWS)
- POTENTIAL STAGING AREA
- LIMITS OF DISTURBANCE
- PROPOSED PIPELINE
- EXISTING TENNESSEE GAS PIPELINE
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TYPICALS

SCALE

200 100 0 200 400

IMAGERY: APRIL/MAY 2015

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DRAFT. COORD: HMM | DATE: 01-12-15

Tennessee Gas Pipeline Company, L.L.C.
a Kinder Morgan company

NORTHEAST ENERGY DIRECT PROJECT
PROPOSED 20" PIPELINE
SEGMENT P HAVERHILL LATERAL
EROSION & SEDIMENT CONTROL PLAN
ALIGNMENT SHEET
MIDDLESEX, MASSACHUSETTS

DESIGN COORD: | DATE: | SCALE: 1 = 200' | PROJ. ID.:

PROJECT COORD: | DATE:

OPER. APPR: | DATE:

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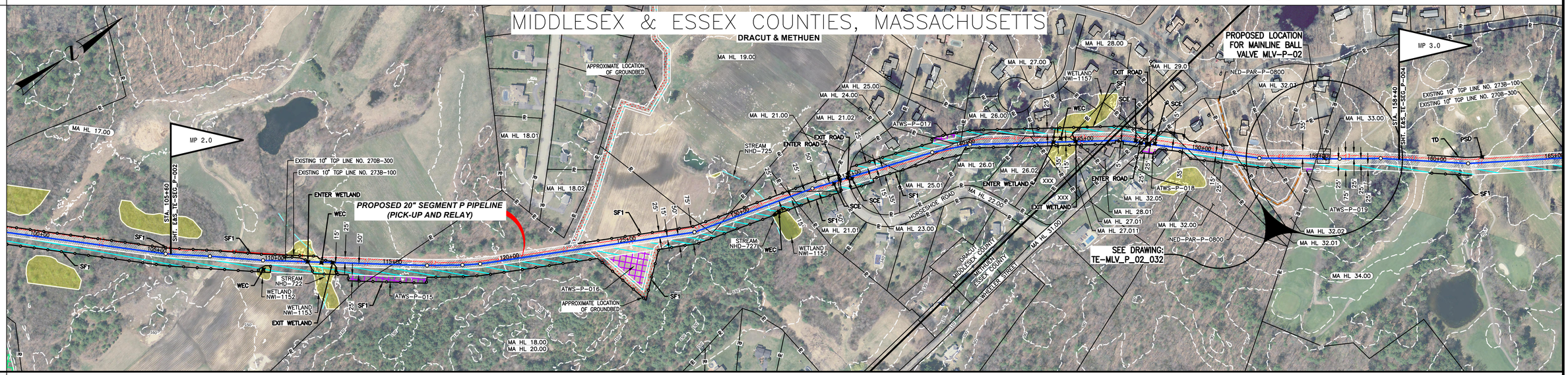
PROTECTION EASEMENT

LINE LIST

PIPELINE STATIONING

ALIGNMENT STRIP MAP



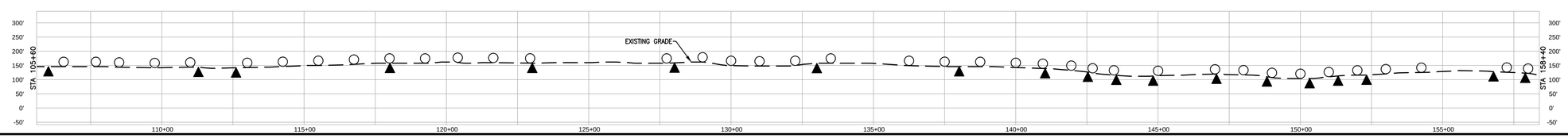
MATERIAL

COATING

DESIGN FACTOR

CLASS LOCATION

PROFILE



ENVIRONMENTAL

SOILS

PROFILE LEGEND

SLOPE BREAKERS

TRENCH PLUG

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LEGEND

- EXISTING PERMANENT EASEMENT
- PROPOSED PERMANENT EASEMENT
- TEMPORARY WORKSPACE
- ADDITIONAL TEMPORARY WORKSPACE (ATWS)
- POTENTIAL STAGING AREA

(LIMITS OF DISTURBANCE)

- PROPOSED PIPELINE
- EXISTING TENNESSEE GAS PIPELINE
- EXISTING FOREIGN PIPELINE
- OVERHEAD POWER LINE
- EXISTING FIBER OPTIC LINE
- PA HG3 400.00 — LINE LIST NUMBER
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- WETLAND (DELINEATED)
- STREAM (DELINEATED)
- STREAM (PHOTO INTERPRETED)
- STREAM (PUBLIC)
- ACCESS ROAD
- FENCE LINE

REFERENCE DRAWINGS

TYPICALS

SCALE

200 100 0 200 400

IMAGERY: APRIL/MAY 2015

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DRAFT. COORD: HMM | DATE: 01-12-15

Tennessee Gas Pipeline Company, L.L.C.
a Kinder Morgan company

NORTHEAST ENERGY DIRECT PROJECT
PROPOSED 20" PIPELINE
SEGMENT P HAVERHILL LATERAL
EROSION & SEDIMENT CONTROL PLAN
ALIGNMENT SHEET
MIDDLESEX & ESSEX COUNTIES, MASSACHUSETTS

DESIGN COORD: | DATE: | SCALE: 1 = 200' | PROJ. ID.:

PROJECT COORD: | DATE:

OPER. APPR: | DATE:

E&S_TE-SEG_P-003 | 0

11/6/2015 3:53 PM HMMORRIS

PROTECTION EASEMENT

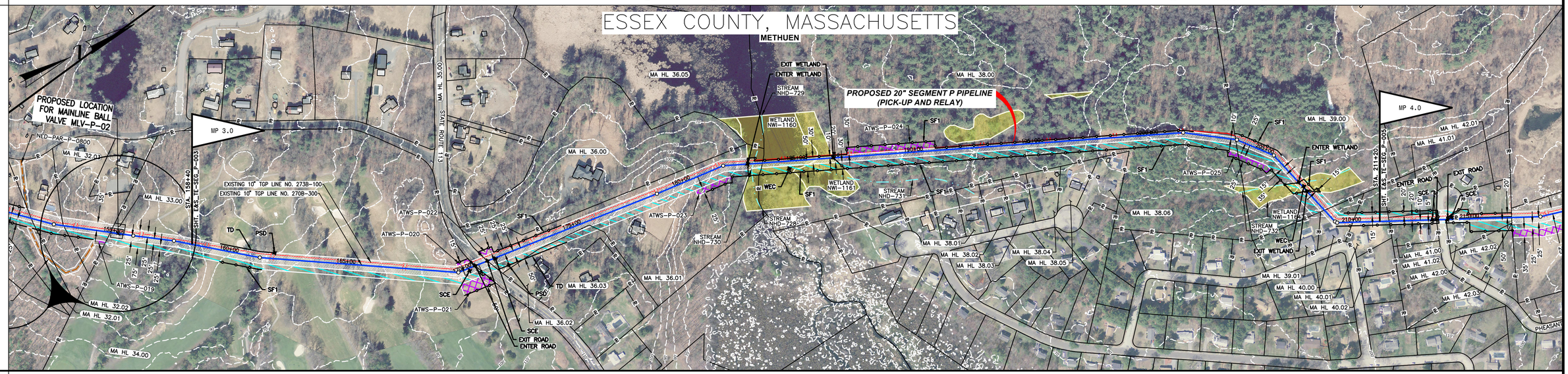
LINE LIST

MA HL 34.00 | 158+40 | MA HL 35.00 | 170+55 | MA HL 36.01 | 171+10 | MA HL 38.00 | 183+56 | MA HL 39.00 | 203+70 | MA HL 40.00 | 208+62 | MA HL 40.01 | 210+05 | 211+20

PIPELINE STATIONING

181+33 PI = 8°40'0" LT.
183+70 PI = 20°50'2" LT.
170+55 PROPERTY LINE
171+07 ℄ OF STATE RTE 113
171+10 PROPERTY LINE
179+84 PI = 17°11'0" LT.
181+88 PI = 18°50'0" RT.
182+04 EDGE OF WETLAND
183+18 ℄ OF STREAM
183+56 PROPERTY LINE
185+66 EDGE OF WETLAND
186+59 EDGE OF WETLAND
201+46 PI = 11°30'4" RT.
203+70 PROPERTY LINE
203+78 PI = 18°27'0" RT.
205+46 PI = 24°18'6" RT.
207+01 EDGE OF WETLAND
207+03 ℄ OF STREAM
207+53 EDGE OF WETLAND
208+62 PROPERTY LINE
208+78 PI = 19°15'15" LT.
209+30 PI = 20°14'2" LT.
210+05 PROPERTY LINE

ALIGNMENT STRIP MAP



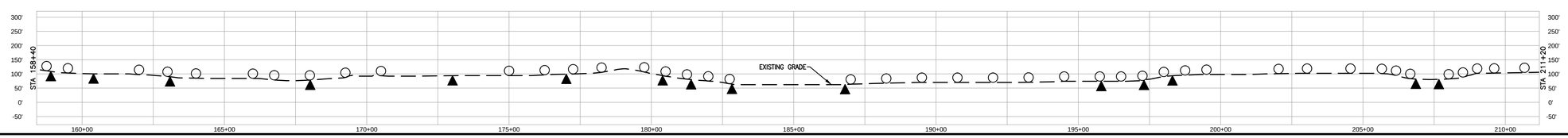
MATERIAL

COATING

DESIGN FACTOR

CLASS LOCATION

PROFILE



ENVIRONMENTAL

SOILS

PROFILE LEGEND

SLOPE BREAKERS

TRENCH PLUG

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LEGEND

- EXISTING PERMANENT EASEMENT
- PROPOSED PERMANENT EASEMENT
- TEMPORARY WORKSPACE
- ADDITIONAL TEMPORARY WORKSPACE (ATWS)
- POTENTIAL STAGING AREA

LIMITS OF DISTURBANCE

- PROPOSED PIPELINE
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- WETLAND (DELINEATED)
- STREAM (DELINEATED)
- STREAM (PHOTO INTERPRETED)
- STREAM (PUBLIC)
- ACCESS ROAD
- X — FENCE LINE

REFERENCE DRAWINGS

TYPICALS

SCALE

200 100 0 200 400

IMAGERY: APRIL/MAY 2015

REVISIONS

NO	PROJ ID	DESCRIPTION	DATE	BY	CK	APPR
0		ISSUE FOR FERC	11/2015	HMM	HMM	

AREA: | DIV.:

DRAFTER: HMM | DATE: 01-12-15

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Tennessee Gas Pipeline Company, L.L.C.
a Kinder Morgan company

NORTHEAST ENERGY DIRECT PROJECT
PROPOSED 20" PIPELINE
SEGMENT P HAVERHILL LATERAL
EROSION & SEDIMENT CONTROL PLAN
ALIGNMENT SHEET
ESSEX COUNTY, MASSACHUSETTS

DESIGN COORD: | DATE: | SCALE: 1 = 200' | PROJ. ID.:

PROJECT COORD: | DATE:

OPER. APPR: | DATE:

E&S_TE-SEG_P-004 | 0

11/6/2015 3:53 PM HMMORRIS

PROTECTION EASEMENT

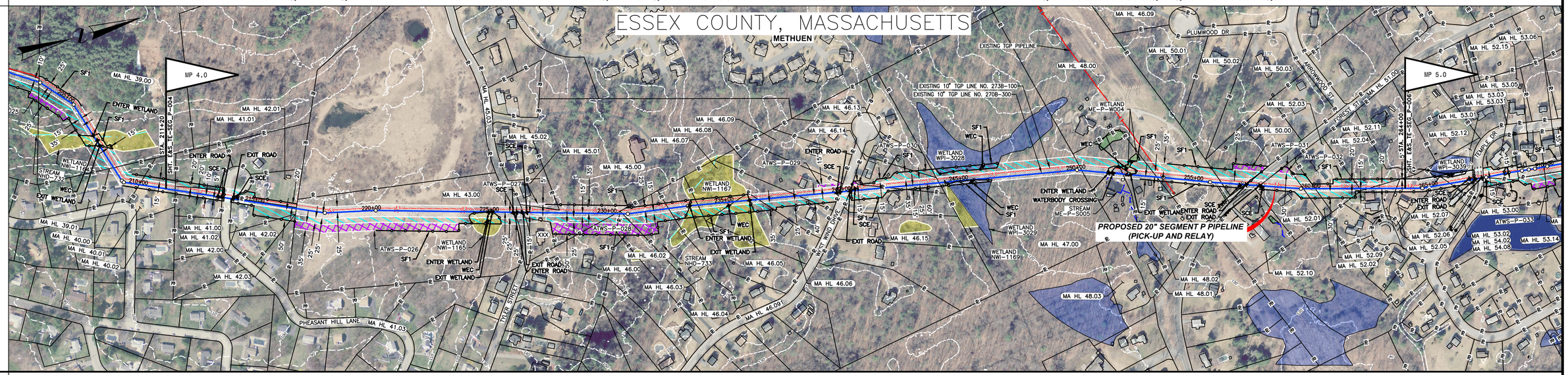
LINE LIST

MA HL 40.01 211+20 | MA HL 41.00 211+59 | MA HL 41.03 213+60 | MA HL 42.00 214+08 | MA HL 43.00 216+79 | MA HL 45.03 218+06 | MA HL 45.00 226+45 | MA HL 46.00 230+36 | MA HL 46.02 230+53 | MA HL 46.03 230+66 | MA HL 46.04 232+62 | MA HL 46.07 233+88 | MA HL 46.06 235+45 | MA HL 46.07 236+45 | MA HL 46.08 238+15 | MA HL 46.09 239+93 | MA HL 46.13 240+36 | MA HL 46.15 241+96 | MA HL 46.14 244+16 | MA HL 47.00 250+24 | MA HL 48.01 251+99 | MA HL 48.02 253+44 | MA HL 48.00 255+20 | MA HL 50.00 257+18 | MA HL 51.06 257+82 | MA HL 52.01 259+68 | MA HL 52.02 260+18 | MA HL 52.03 262+08 | MA HL 52.04 262+43 | MA HL 52.05 263+62 | MA HL 52.06 264+00

PIPELINE STATIONING

211+59 PROPERTY LINE
213+60 PROPERTY LINE
213+84 ℄ OF PHEASANT HILL LN
214+08 PROPERTY LINE
216+79 PROPERTY LINE
218+92 PI = 11°24'36" RT.
226+18 PI = 3°11'5" RT.
224+98 EDGE OF WETLAND
225+13 EDGE OF WETLAND
226+06 PROPERTY LINE
226+45 PROPERTY LINE
226+51 ℄ OF TYLER ST
230+36 PROPERTY LINE
230+45 PROPERTY LINE
230+53 PROPERTY LINE
230+88 PI = 8°11'6" LT.
232+62 PROPERTY LINE
233+45 PI = 2°30'7" RT.
233+53 ℄ OF STREAM
233+53 EDGE OF WETLAND
233+88 PROPERTY LINE
235+45 PROPERTY LINE
236+08 EDGE OF WETLAND
236+45 PROPERTY LINE
238+15 PROPERTY LINE
239+93 PROPERTY LINE
240+24 ℄ OF WESTWIND DR
240+36 PROPERTY LINE
241+96 PROPERTY LINE
244+16 PROPERTY LINE
244+41 EDGE OF WETLAND
244+44 EDGE OF WETLAND
250+93 PI = 10°12'6" RT.
250+24 PROPERTY LINE
251+39 EDGE OF WETLAND
251+47 EDGE OF WETLAND
251+66 EDGE OF STREAM
251+88 EDGE OF WETLAND
252+05 EDGE OF STREAM
252+14 EDGE OF WETLAND
252+32 EDGE OF WETLAND
253+44 PROPERTY LINE
253+70 ℄ OF EXISTING TGP PIPELINE
253+71 PI = 1°30'4" LT.
255+21 PI = 1°30'4" LT.
256+20 PROPERTY LINE
257+18 PROPERTY LINE
257+43 EDGE OF PAVEMENT
257+66 ℄ OF FOREST ST
257+82 OVERHEAD POWER LINE
258+32 EDGE OF PAVEMENT
258+09 EDGE OF PAVEMENT
259+58 PI = 6°12'2" LT.
259+68 PROPERTY LINE
260+18 PROPERTY LINE
262+08 PROPERTY LINE
262+43 PROPERTY LINE
263+62 PROPERTY LINE

ALIGNMENT STRIP MAP



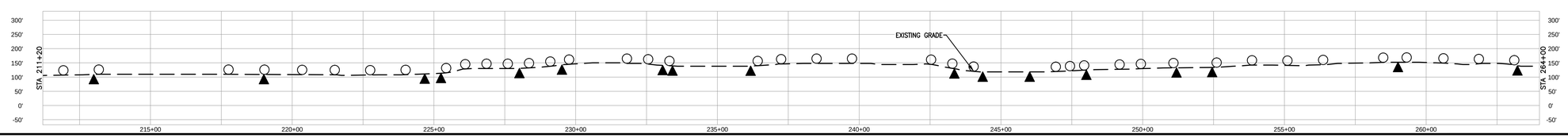
MATERIAL

COATING

DESIGN FACTOR

CLASS LOCATION

PROFILE



ENVIRONMENTAL

SOILS

PROFILE LEGEND

SLOPE BREAKERS ◯

TRENCH PLUG ▲

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LEGEND

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- STREAM (PHOTO INTERPRETED)
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- ACCESS ROAD
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REFERENCE DRAWINGS

TYPICALS

SCALE

200 100 0 200 400

IMAGERY: APRIL/MAY 2015

REVISIONS

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0		ISSUE FOR FERC	11/2015	HMM	HMM	

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DRAFT. COORD: HMM | DATE: 01-12-15

Tennessee Gas Pipeline Company, L.L.C.
a Kinder Morgan company

NORTHEAST ENERGY DIRECT PROJECT
PROPOSED 20" PIPELINE
SEGMENT P HAVERHILL LATERAL
EROSION & SEDIMENT CONTROL PLAN
ALIGNMENT SHEET
ESSEX COUNTY, MASSACHUSETTS

DESIGN COORD: | DATE: | SCALE: 1 = 200' | PROJ. ID.:

PROJECT COORD: | DATE:

OPER. APPR: | DATE:

E&S_TE-SEG_P-005 | 0

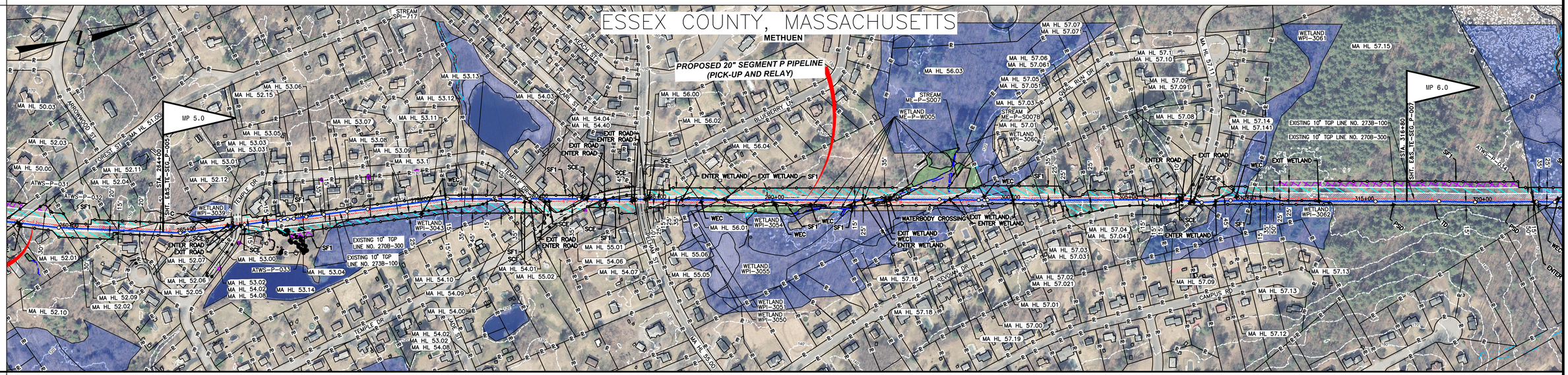
11/6/2015 3:53 PM HMMIMS

PROTECTION EASEMENT

LINE LIST

PIPELINE STATIONING

ALIGNMENT STRIP MAP



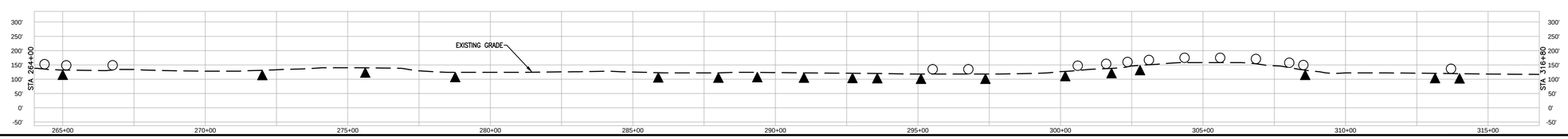
MATERIAL

COATING

DESIGN FACTOR

CLASS LOCATION

PROFILE



ENVIRONMENTAL

SOILS

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SLOPE BREAKERS

TRENCH PLUG

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LIMITS OF DISTURBANCE

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- WETLAND (PHOTO INTERPRETED)
- WETLAND (DELINEATED)
- STREAM (DELINEATED)
- STREAM (PHOTO INTERPRETED)
- STREAM (PUBLIC)
- ACCESS ROAD
- X — FENCE LINE

REFERENCE DRAWINGS

TYPICALS

SCALE

200 100 0 200 400

IMAGERY: APRIL/MAY 2015

REVISIONS

NO	PROJ ID	DESCRIPTION	DATE	BY	CK	APPR
0		ISSUE FOR FERC	11/2015	HMM	HMM	

AREA: | DIV.:

DRAFTER: HMM | DATE: 01-12-15

DRAFT. COORD: HMM | DATE: 01-12-15

Tennessee Gas Pipeline Company, L.L.C.
a Kinder Morgan company

NORTHEAST ENERGY DIRECT PROJECT
PROPOSED 20" PIPELINE
SEGMENT P HAVERRHILL LATERAL
EROSION & SEDIMENT CONTROL PLAN
ALIGNMENT SHEET
ESSEX COUNTY, MASSACHUSETTS

DESIGN COORD: | DATE: | SCALE: 1 = 200' | PROJ. ID.:

PROJECT COORD: | DATE:

OPER. APPR: | DATE:

E&S_TE-SEG_P-006 | 0

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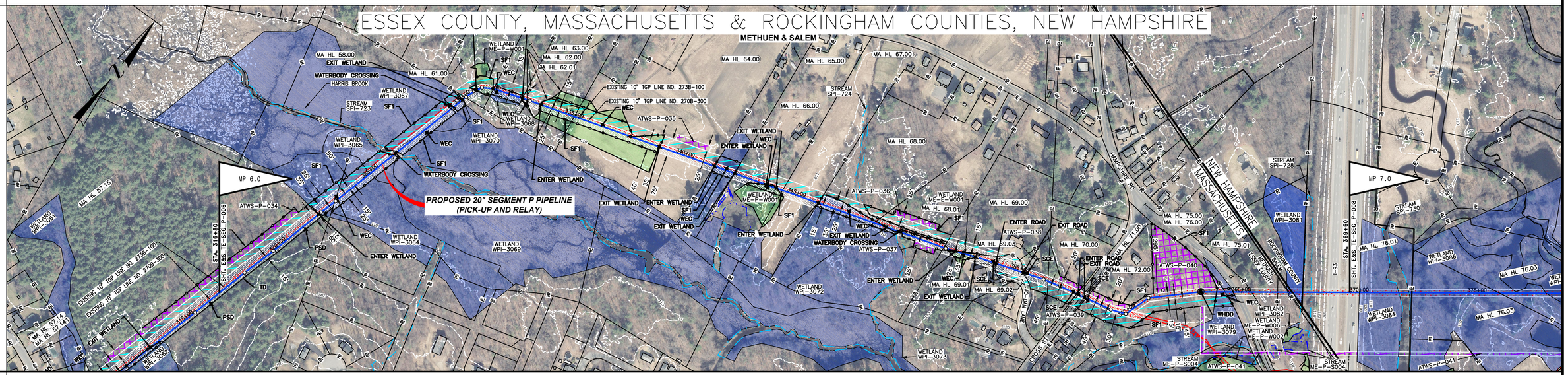
PROTECTION EASEMENT

LINE LIST

PIPELINE STATIONING

ALIGNMENT STRIP MAP



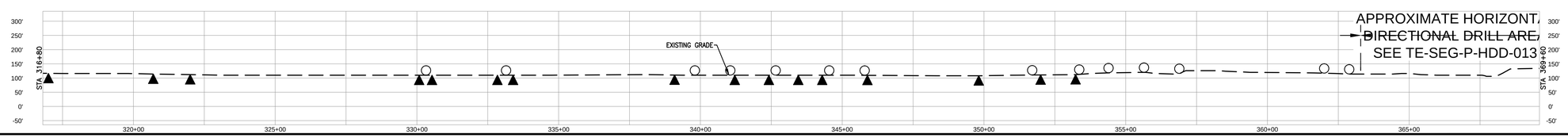
MATERIAL

COATING

DESIGN FACTOR

CLASS LOCATION

PROFILE



ENVIRONMENTAL

SOILS

PROFILE LEGEND

SLOPE BREAKERS

TRENCH PLUG

NOTES

1. EXISTING TENNESSEE GAS PIPELINE PERMANENT EASEMENTS ARE NOT DEPICTED IN THEIR ENTIRETY.
2. PUBLIC WETLANDS ARE OBTAINED FROM THE NATIONAL WETLAND INVENTORY (NWI) (AS DEFINED IN RESOURCE REPORT 2.3)
3. PUBLIC STREAMS ARE OBTAINED FROM THE NATIONAL HYDROGRAPHY DATASET. (NHD). (AS DEFINED IN RESOURCE REPORT 2.2)
4. PHOTO INTERPRETED WETLANDS AND STREAMS ARE A RESULT OF A HIGH RESOLUTION PHOTOGRAPHIC INTERPOLATION.
5. DELINEATED WETLANDS AND STREAMS ARE THE RESULT OF AN ENVIRONMENTAL GROUND SURVEY.
6. PROPERTY LINES ARE BASED ON TAX MAPS AND ARE NOT THE RESULT OF A FULL BOUNDARY SURVEY.
7. TRENCH PLUGS SHALL BE INSTALLED AT ALL ROAD CROSSINGS AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
8. PERMANENT SLOPE BREAKERS SHOWN IN CULTIVATED AREAS AND LAWNS SHALL ONLY BE INSTALLED WITH THE LANDOWNER'S PERMISSION.

LEGEND

- EXISTING PERMANENT EASEMENT
- PROPOSED PERMANENT EASEMENT
- TEMPORARY WORKSPACE
- ADDITIONAL TEMPORARY WORKSPACE (ATWS)
- POTENTIAL STAGING AREA
- LIMITS OF DISTURBANCE
- PROPOSED PIPELINE
- EXISTING TENNESSEE GAS PIPELINE
- EXISTING FOREIGN PIPELINE
- OH — OVERHEAD POWER LINE
- F — EXISTING FIBER OPTIC LINE
- PA HG3 400.00 — LINE LIST NUMBER
- R — PROPERTY LINE
- MUNICIPAL LINE
- WETLAND (PUBLIC)
- WETLAND (PHOTO INTERPRETED)
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SEGMENT P HAVERRHILL LATERAL
EROSION & SEDIMENT CONTROL PLAN
ALIGNMENT SHEET
ESSEX COUNTY MASSACHUSETTS & ROCKINGHAM COUNTY, NEW HAMPSHIRE

DESIGN COORD:	DATE:	SCALE: 1 = 200'	PROJ. ID.:
PROJECT COORD:	DATE:	E&S_TE-SEG_P-007	0
OPER. APPR:	DATE:		

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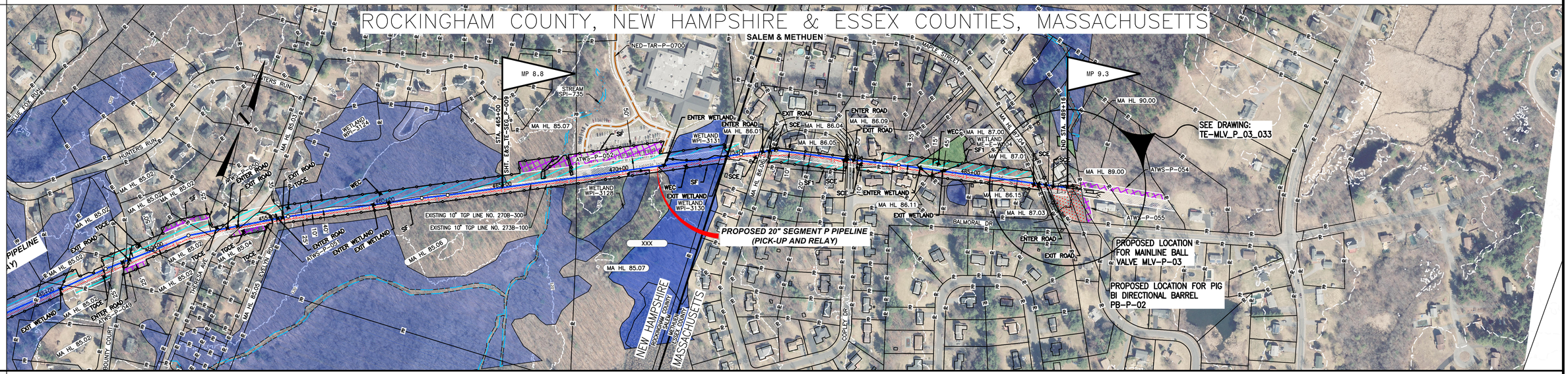
PROTECTION EASEMENT

LINE LIST

PIPELINE STATIONING

ALIGNMENT STRIP MAP



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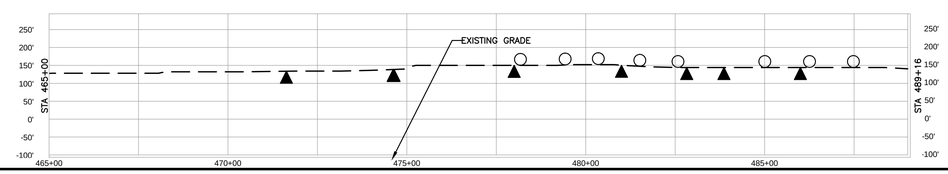

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ROCKINGHAM COUNTY NEW HAMPSHIRE & ESSEX COUNTY, MASSACHUSETTS

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