



CITY OF ANN ARBOR, MICHIGAN

**BID SET**

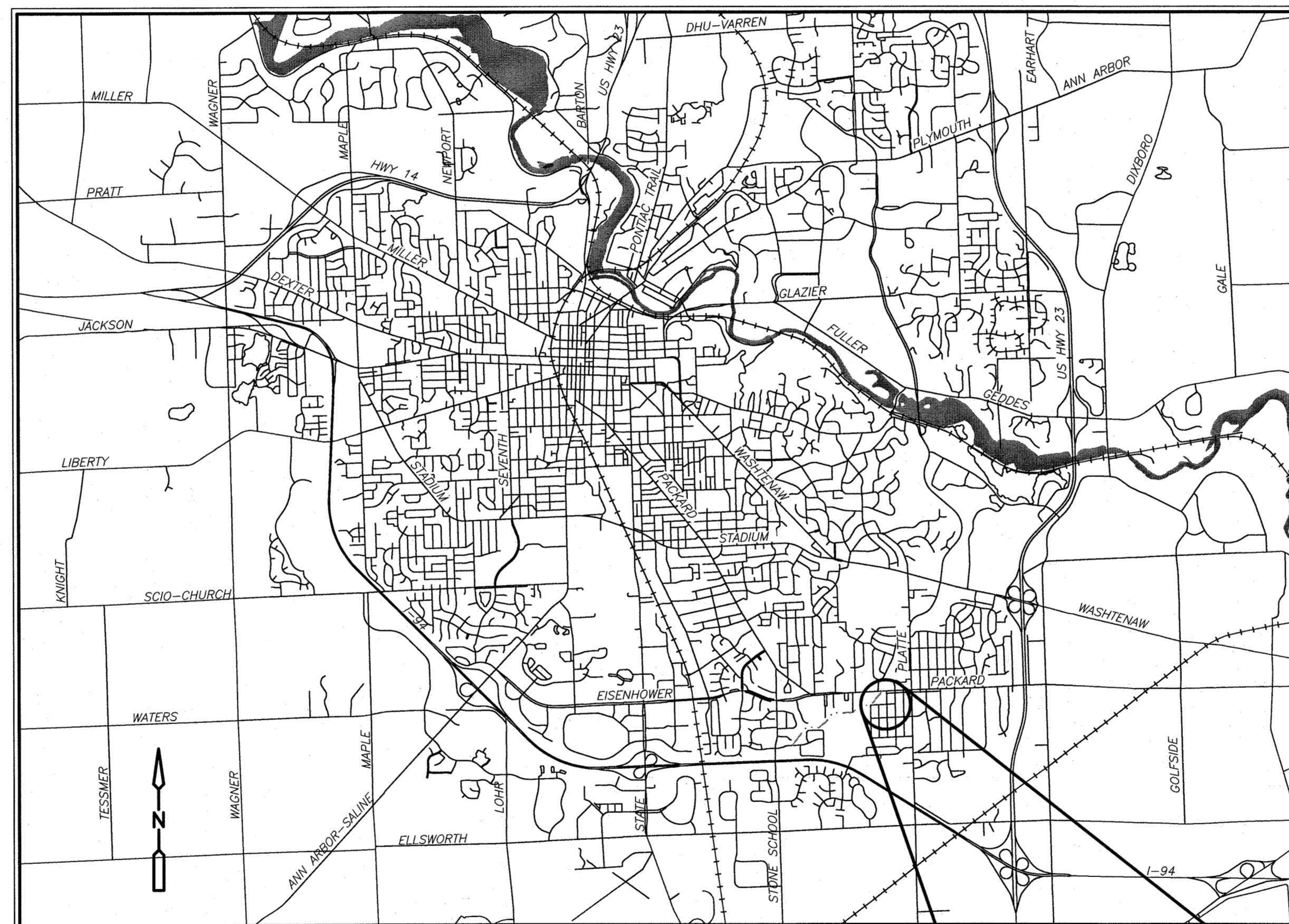
**PROJECT MANAGEMENT**

# SPRINGWATER SUBDIVISION IMPROVEMENTS PROJECT

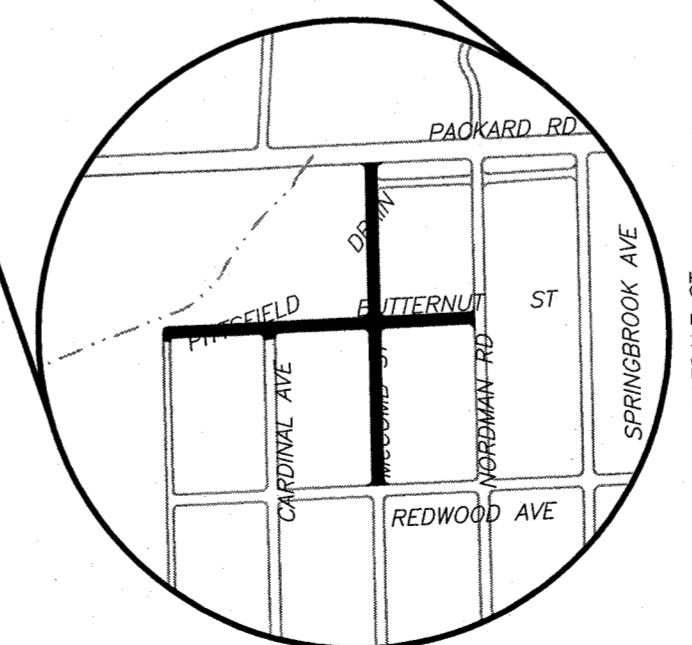
## PHASE I

**BID NO. 4323**  
**BID DATE: MAY 2014**

SHEET LIST TABLE	
SHEET NUMBER	SHEET TITLE
	COVER SHEET
C-1, C-2	TYPICAL ROAD SECTIONS
C-3	CIVIL DETAILS
C-4, C-5	SAND FILTER DETAILS
C-6	NOTES
C-7	LEGEND
C-8	ALIGNMENT PLAN
C-9	SITE SURVEY CONTROL
C-10, C-11	MAINTENANCE OF TRAFFIC
C-12	ROADWAY REMOVAL PLAN
C-13	SOIL EROSION/SEDIMENT CONTROL OVERVIEW
C-14 TO C-17	WATER MAIN PLAN AND PROFILES
C-18 TO C-24	STORM SEWER PLAN AND PROFILES
C-25 TO C-30	ROAD PLAN AND PROFILES
C-31, C-32	INTERSECTION GRADING PLANS
C-33	UTILITY OVERVIEW



LOCATION PLAN



PROJECT LOCATION

**NOTES:**

THE CONSTRUCTION COVERED BY THESE PLANS SHALL CONFORM TO THE 1994 EDITION OF THE CITY OF ANN ARBOR PUBLIC SERVICES DEPARTMENT STANDARD SPECIFICATIONS AND ITS DETAILS WHICH ARE INCLUDED BY REFERENCE. THE OMISSION OF ANY CURRENT STANDARD DETAILS DOES NOT RELIEVE THE CONTRACTOR FROM THIS REQUIREMENT. THE WORK SHALL BE PERFORMED IN COMPLETE CONFORMANCE WITH THE CURRENT PUBLIC SERVICE STANDARD SPECIFICATIONS AND DETAILS.

FOR PROTECTION OF UNDERGROUND UTILITIES AND IN CONFORMANCE WITH PUBLIC ACT 53, THE CONTRACTOR SHALL CALL 811 OR 1-800-482-7171 A MINIMUM OF THREE FULL WORKING DAYS, EXCLUDING SATURDAYS, SUNDAYS, AND HOLIDAYS PRIOR TO BEGINNING EACH EXCAVATION IN AREAS WHERE PUBLIC UTILITIES HAVE NOT BEEN PREVIOUSLY LOCATED. MEMBERS WILL THUS BE ROUTINELY NOTIFIED. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO MAY NOT BE A PART OF THE "MISS DIG" ALERT SYSTEM.

THE UNDERGROUND LOCATIONS SHOWN FOR NATURAL GAS, TELEPHONE, ELECTRICAL POWER, CABLE TV AND FIBER OPTIC LINES ARE APPROXIMATE. THE CITY OF ANN ARBOR ASSUMES NO RESPONSIBILITY FOR THEIR ACCURATE REPRESENTATION IN THIS DRAWING. "MISS DIG" MUST BE CONTACTED PRIOR TO CONSTRUCTION TO LOCATE THESE UTILITIES.



**MICHIGAN INC - DETROIT, MICHIGAN**

Water

Environment

Transportation

Energy

Facilities

<p><b>PROJECT MANAGEMENT SERVICE UNIT</b></p>	
<p>NICHOLAS HUTCHINSON, P.E. - MI LICENSE No. 46789 CITY ENGINEER</p> <p>_____/_____/2014 DATE</p>	ENGINEER'S SEAL
<p>PREPARED UNDER THE SUPERVISION OF</p> <p>ANNE WARROW, P.E. - MI LICENSE NO. 48239 PROJECT MANAGER</p> <p>_____/_____/2014 DATE</p>	ENGINEER'S SEAL

**811** Know what's below. Call before you dig.

REV.	DESCRIPTION	DATE	DRAWN	CHECKED

CITY OF ANN ARBOR  
PUBLIC SERVICES DEPARTMENT  
301 EAST HURON STREET  
ANN ARBOR, MI 48107-4847  
www.a2gov.org

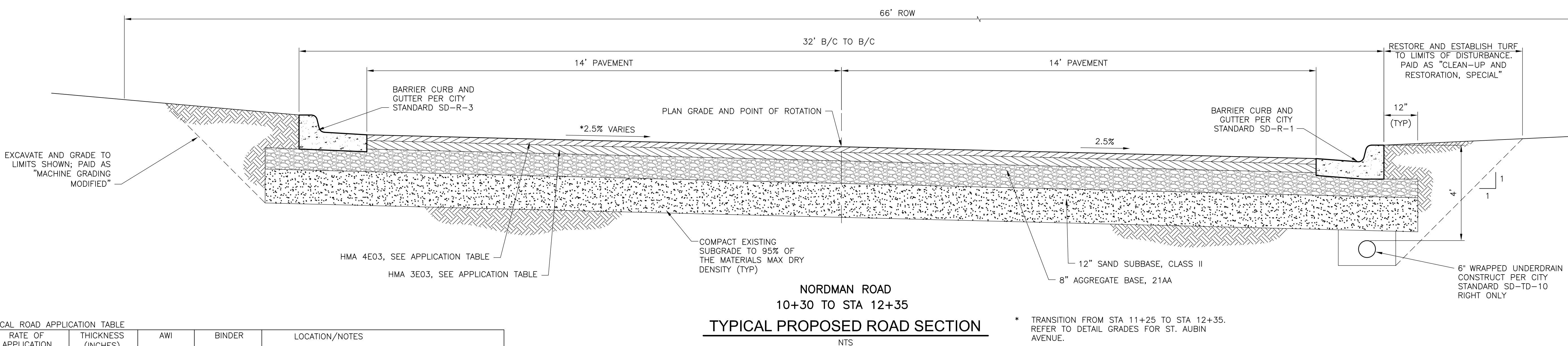
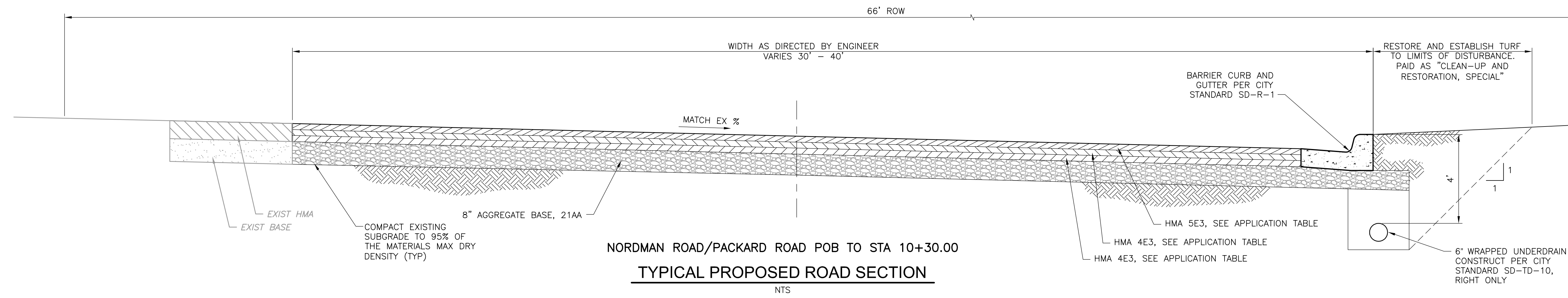
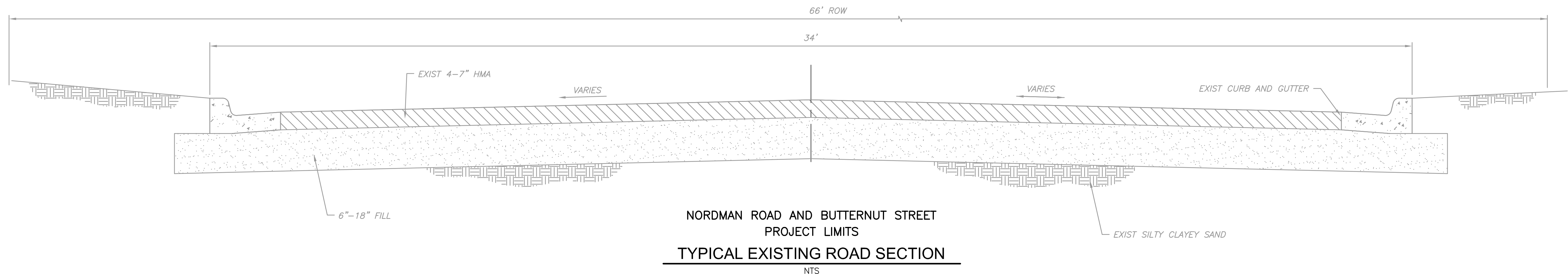
CITY OF ANN ARBOR

**PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR**  
**SPRINGWATER SUBDIVISION IMPROVEMENTS**  
**PROJECT PHASE I**  
**COVER SHEET**

SCALE: \_\_\_\_\_  
DRAWING No. GCS00000  
SHEET No. 0 OF 33

1400-100237

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TYPICAL ROAD APPLICATION TABLE

MIX	RATE OF APPLICATION	THICKNESS (INCHES)	AWI	BINDER	LOCATION/NOTES
HMA 4E03	220 LB/SYD	2	220	58-28	TOP/LEVELING COURSE (BUTTERNUT AND NORDMAN)
HMA 3E03	330 LB/SYD	3	-	58-22	BASE COURSE (BUTTERNUT AND NORDMAN)
HMA 5E3	220 LB/SYD	2	260	64-28	TOP COURSE (PACKARD)
HMA 4E3	220 LB/SYD	4 (2 LIFTS)	-	64-28	LEVELING COURSE (PACKARD)

REV. NO.	DATE	DRWN	CHKD	REMARKS



DESIGNED BY: B. SMITH  
 DRAWN BY: C. ANDERSON  
 SHEET CHK'D BY: J. ZAWACKI  
 CROSS CHK'D BY: B. SMITH  
 APPROVED BY: J. ZAWACKI  
 DATE: MAY 2014



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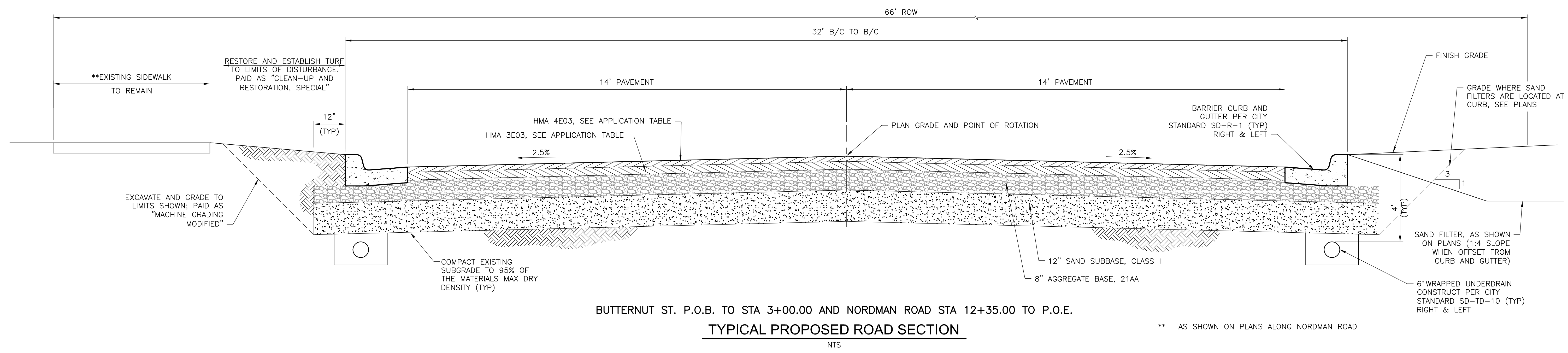
CITY OF ANN ARBOR, MICHIGAN  
 SPRINGWATER SUBDIVISION  
 IMPROVEMENTS PROJECT

TYPICAL ROAD SECTIONS  
 C-1

PROJECT NO. 1400-100237  
 FILE NAME: C001RDDT.DWG  
 SHEET NO. C-1

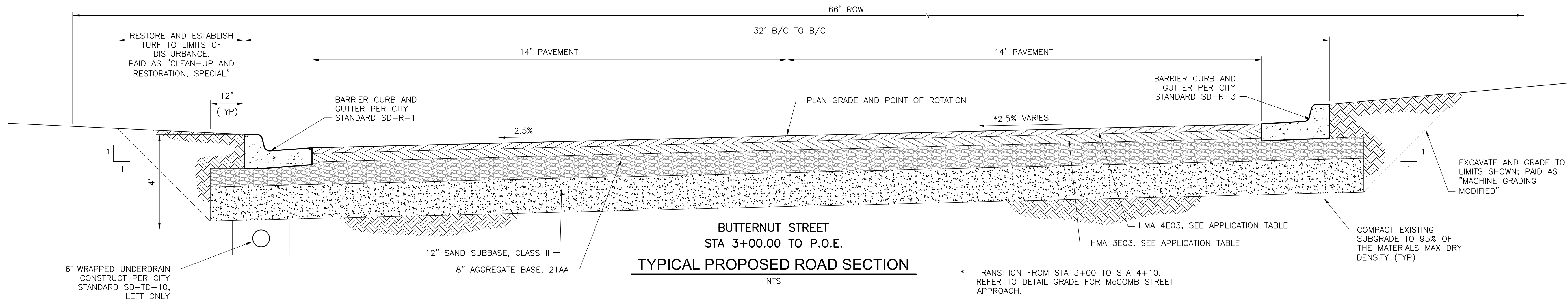


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**BUTTERNUT ST. P.O.B. TO STA 3+00.00 AND NORDMAN ROAD STA 12+35.00 TO P.O.E.**  
**TYPICAL PROPOSED ROAD SECTION**  
 NTS

\*\* AS SHOWN ON PLANS ALONG NORDMAN ROAD



**BUTTERNUT STREET**  
**STA 3+00.00 TO P.O.E.**  
**TYPICAL PROPOSED ROAD SECTION**  
 NTS

\* TRANSITION FROM STA 3+00 TO STA 4+10. REFER TO DETAIL GRADE FOR McCOMB STREET APPROACH.

REV. NO.	DATE	DRWN	CHKD	REMARKS



DESIGNED BY: B. SMITH  
 DRAWN BY: C. ANDERSON  
 SHEET CHK'D BY: J. ZAWACKI  
 CROSS CHK'D BY: B. SMITH  
 APPROVED BY: J. ZAWACKI  
 DATE: MAY 2014



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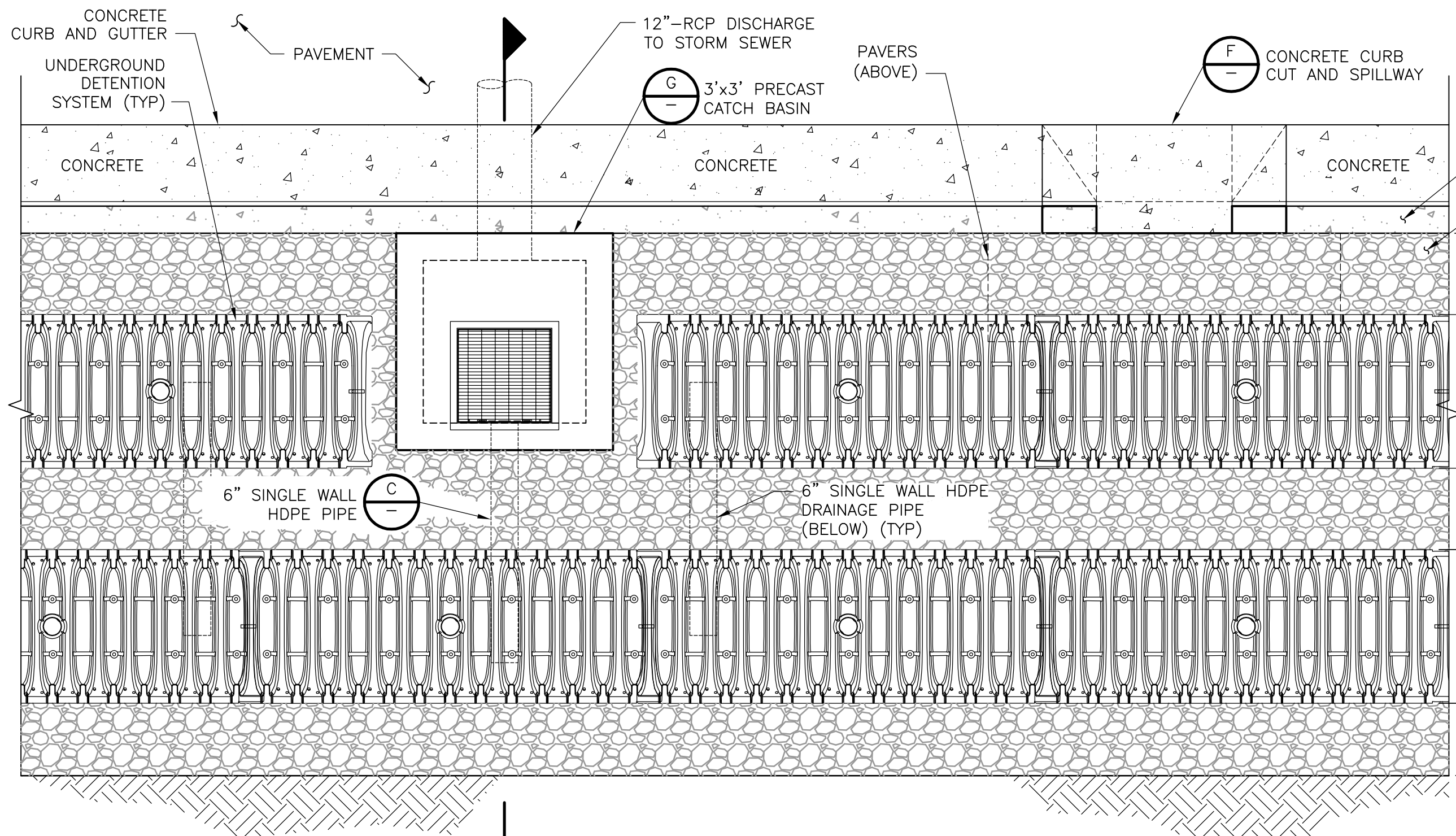
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**SPRINGWATER SUBDIVISION**  
**IMPROVEMENTS PROJECT**

**TYPICAL ROAD SECTIONS**  
**C-2**

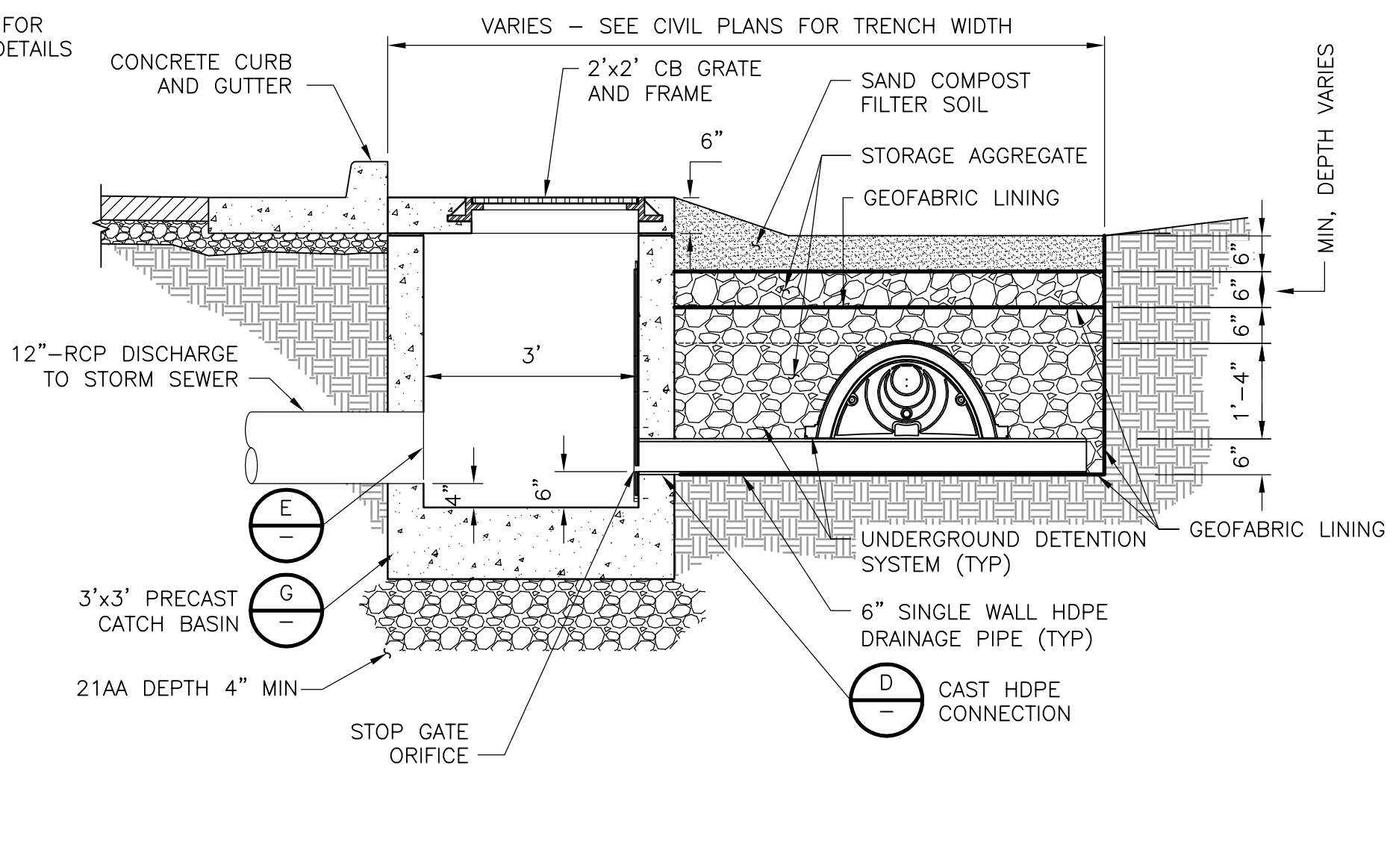
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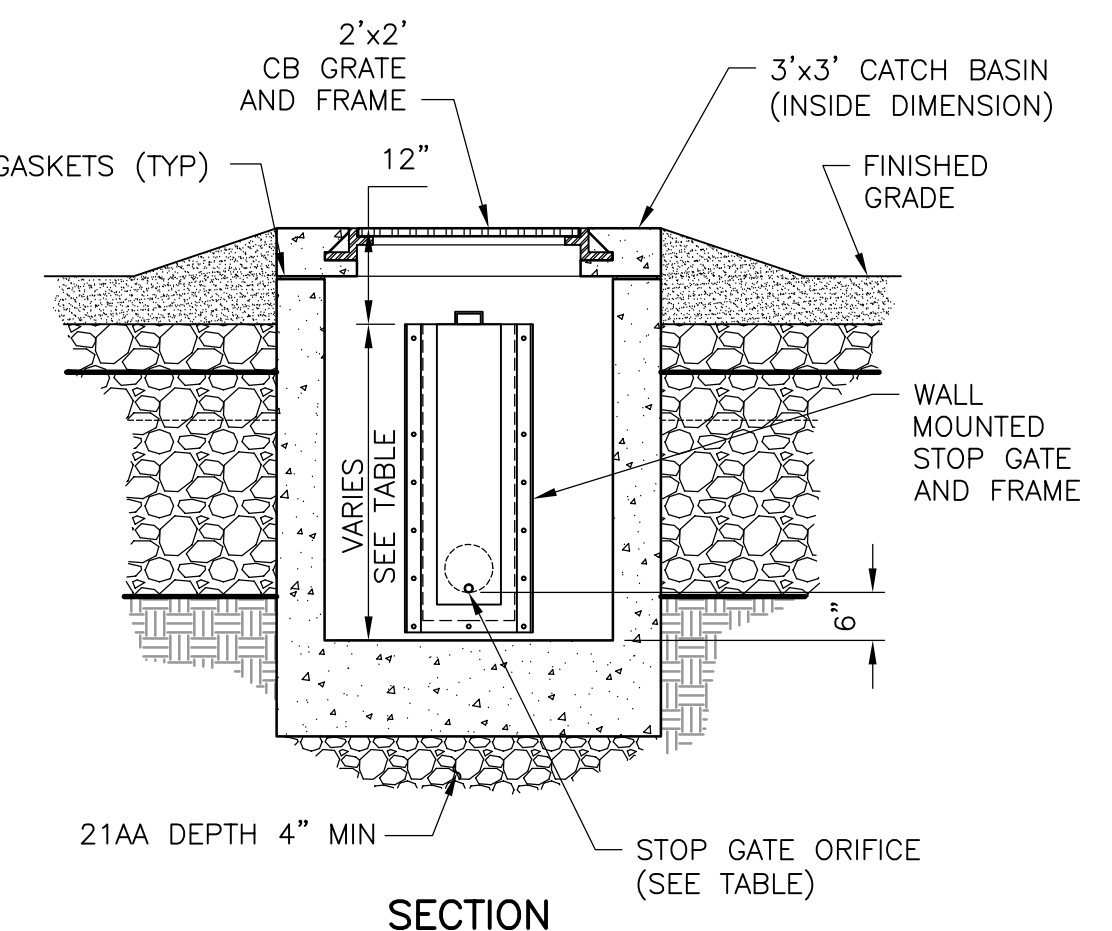




TYPICAL SAND FILTER - PARTIAL PLAN  
**DETAIL A**  
 1/2" = 1'-0"

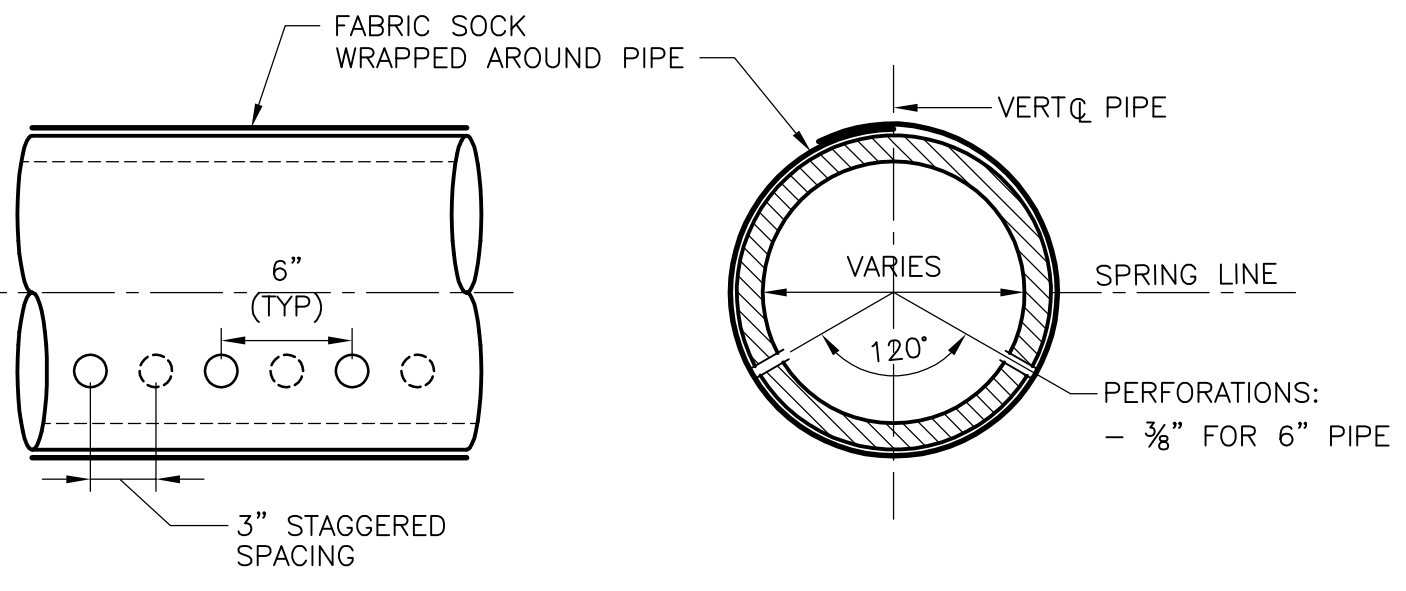


TYPICAL SAND FILTER - PARTIAL SECTION  
**SECTION B**  
 1/2" = 1'-0"

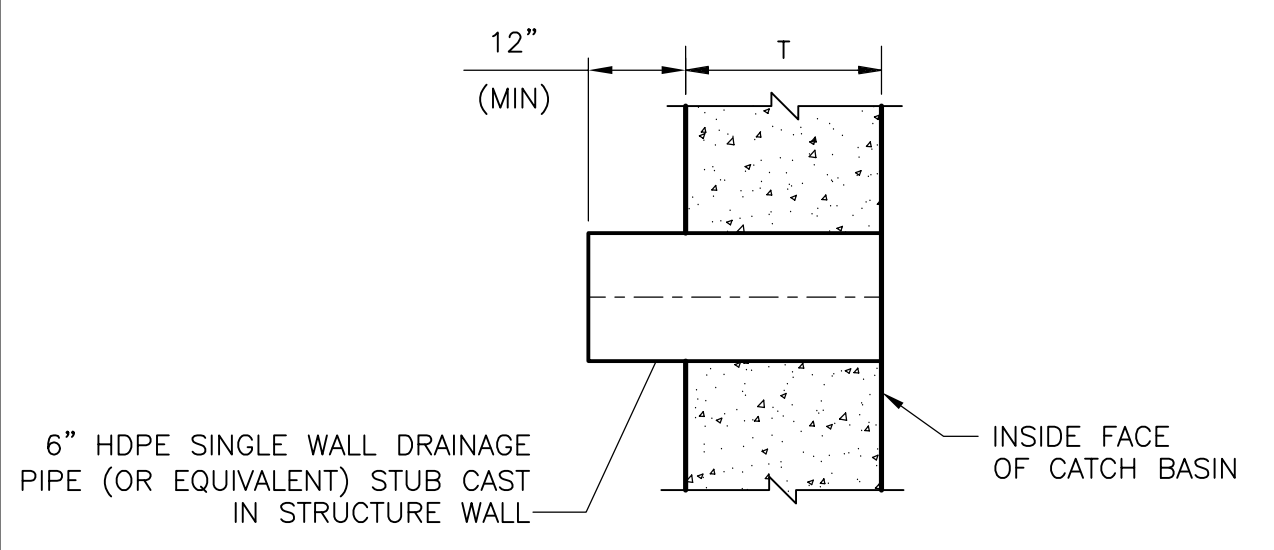


**SECTION G**  
 1/2" = 1'-0"

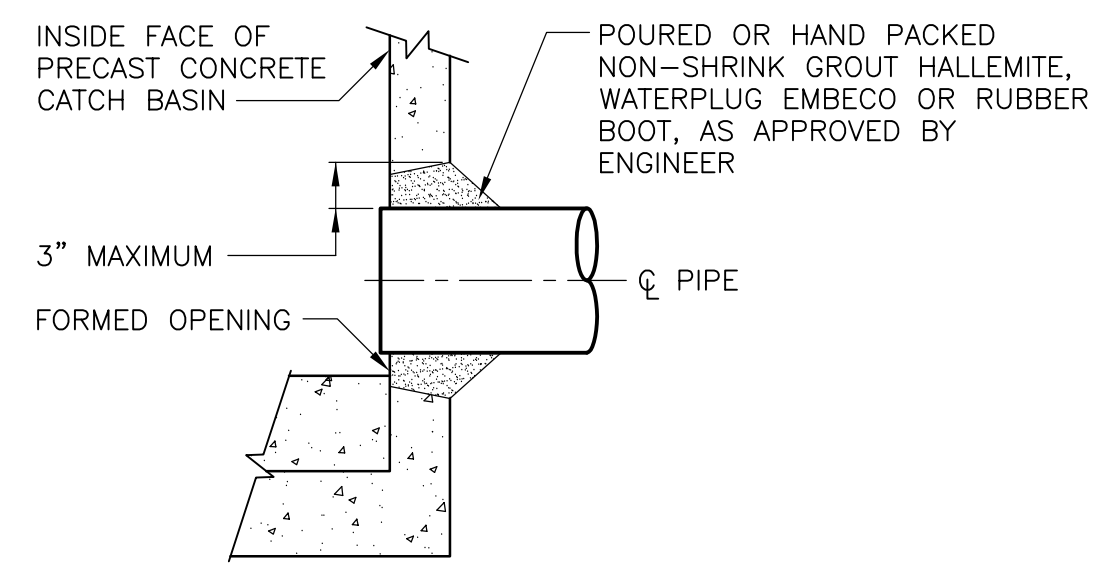
- NOTES:**
1. DEFLECT HDPE PIPES IN TRENCH AS NECESSARY AT CATCH BASIN TO ALIGN WITH CATCH BASIN PENETRATIONS (TYP).
  2. CONDITION SHOWN IS TYPICAL FOR ALL SAND FILTERS. SEE PLANS FOR TRENCH WIDTH AT EACH LOCATION. CONTRACTOR SHALL SUBMIT SPACING PLAN/QUANTITY OF UNDERGROUND RETENTION UNITS PER TRENCH TO ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.



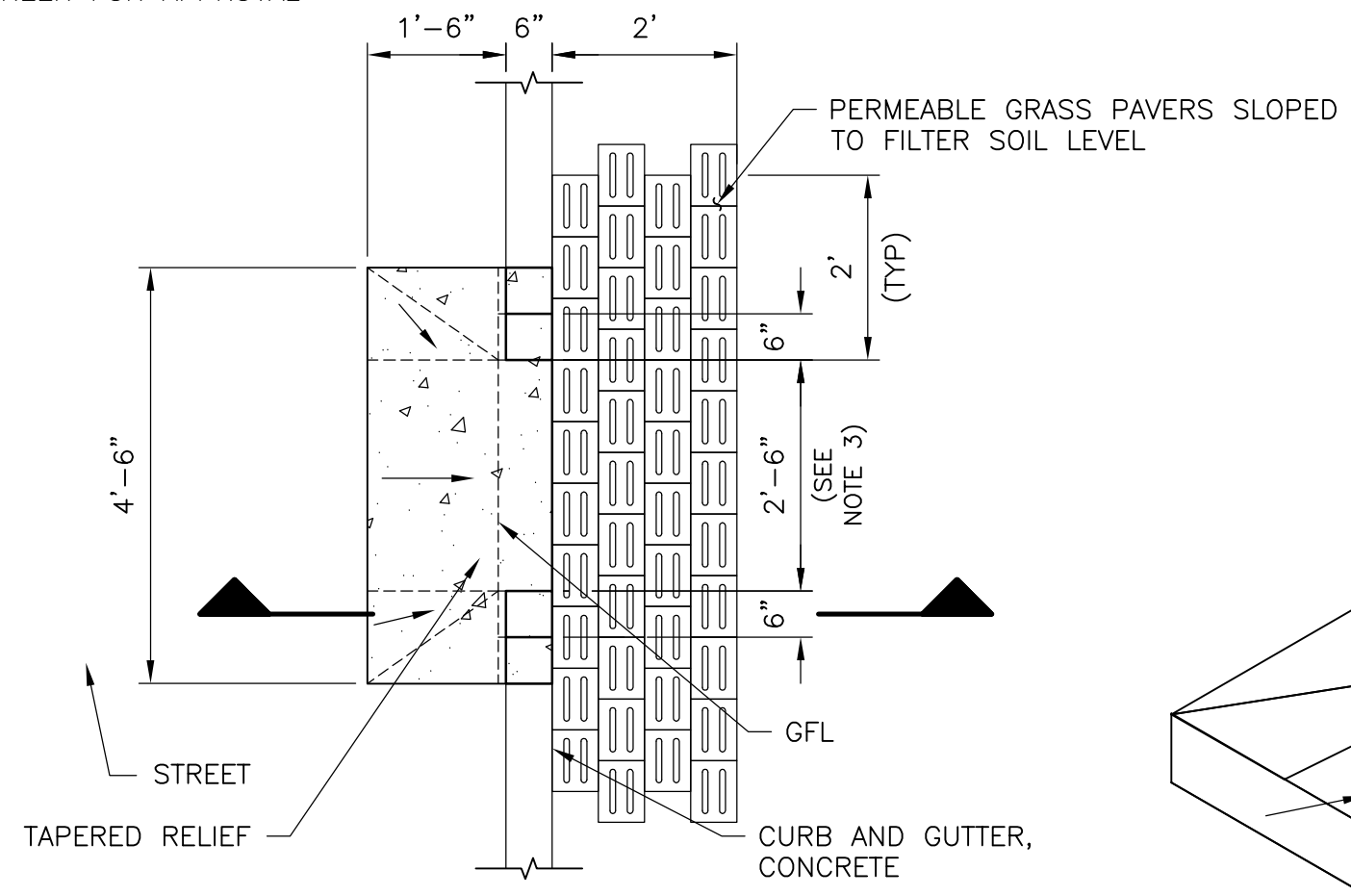
HDPE PERFORATED PIPE  
**DETAIL C**  
 NTS



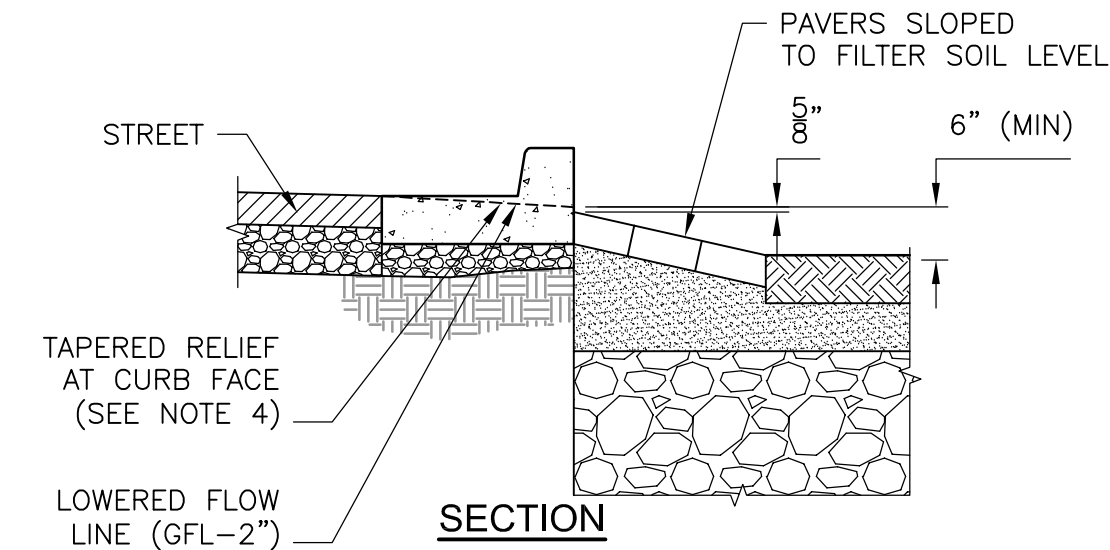
PLAIN END WALL PIPE  
 CAST HDPE CONNECTION  
**DETAIL D**  
 NTS



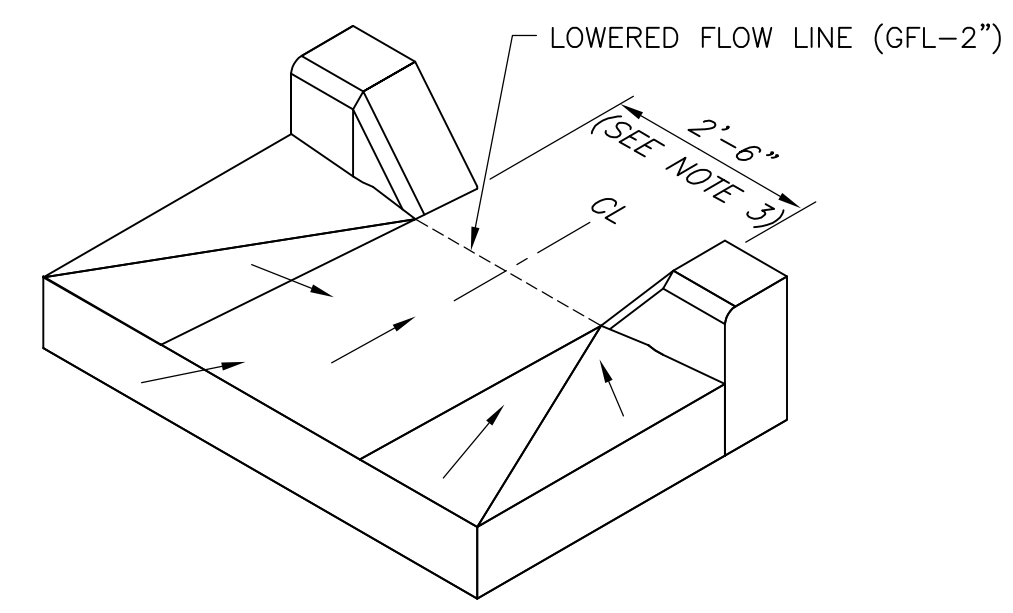
TYPICAL PIPE CONNECTION FOR CATCH  
 BASIN TO STORM SEWER  
**DETAIL E**  
 NTS



**PLAN**



**SECTION**



**ISOMETRIC**

- NOTES:**
1. CONCRETE SPLASH PAD NECESSARY WHERE WATER ENTERS AND/OR EXITS SAND FILTERS.
  2. THE FULL WIDTH CURB CUT OPENING IS 2'-6" UNLESS CALLED OUT DIFFERENTLY ON THE DRAWINGS.
  3. MAINTAIN STANDARD GUTTER HEIGHT IN DEPRESSED GUTTER LOCATIONS

**Catch Basin & Stop Gate Flow Control Table**

Catch Basin ID	Catch Basin Rim Elevation	Orifice Diameter (in)	Orifice Invert Elevation	Top of Gate Elevation	Sand Filter Name	Sand Filter Storage Vol. (Gal)	Peak Q for Curb Cut Design (cfs)
CB-2A	802.72	0.5	798.89	801.72	1	200*	3.00
CB-3A	802.24	0.75	798.41	801.24	2	540	3.21
CB-7A	815.22	1	811.39	814.22	3	1,650	8.67
CB-8A	812.98	1	809.15	811.98	4	360	0.66
CB-9C	811.56	0.5	807.73	810.56	4	360	0.66
CB-9B	811.40	1	805.90	810.4	5	1,350	10.8
CB-18A	805.39	1.25	801.56	804.39	6	2,780	10.0
CB-18B	805.44	1	801.61	804.44	8	800	6.74
CB-17A	806.68	0.5	802.85	805.68	9	310	0.76
CB-16A	809.93	0.5	806.10	808.93	10	370	0.65
CB-14A	815.79	0.5	811.96	814.79	11	275	1.29
CB-12A	823.36	0.5	819.53	822.36	12	170	0.45
CB-11A	824.51	0.5	820.68	823.51	13	360	1.60
CB-8C	813.84	1	810.01	812.84	14	950	3.92
CB-11B	824.48	0.5	820.65	823.48	15	360	1.71

\* will be increased to 400 cf in future phase

- NOTES:**
1. SEE TABLE FOR STOP GATE HEIGHT DIMENSIONS AND ORIFICE SIZE.
  2. STOP GATE MANUFACTURER TO SPECIFY ANCHOR BOLT SIZE, PATTERN AND EMBEDMENT DEPTH.
  3. FRAME SHALL BE CAST SUCH THAT WHEN GRATE IS REMOVED THE STOP GATE CAN BE PULLED VERTICALLY AND REMOVE/REPLACED.

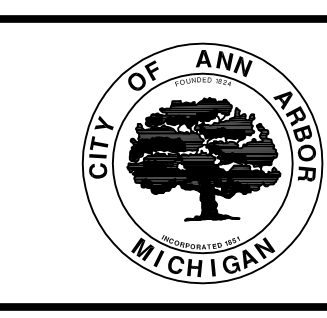
3'x3' PRECAST CATCH BASIN  
**SECTION G**  
 1/2" = 1'-0"

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REV. NO.	DATE	DRWN	CHKD	REMARKS



DESIGNED BY: J. ZAWACKI  
 DRAWN BY: D. KRAFT  
 SHEET CHK'D BY: J. ZAWACKI  
 CROSS CHK'D BY: B. SMITH  
 APPROVED BY: J. ZAWACKI  
 DATE: MAY 2014



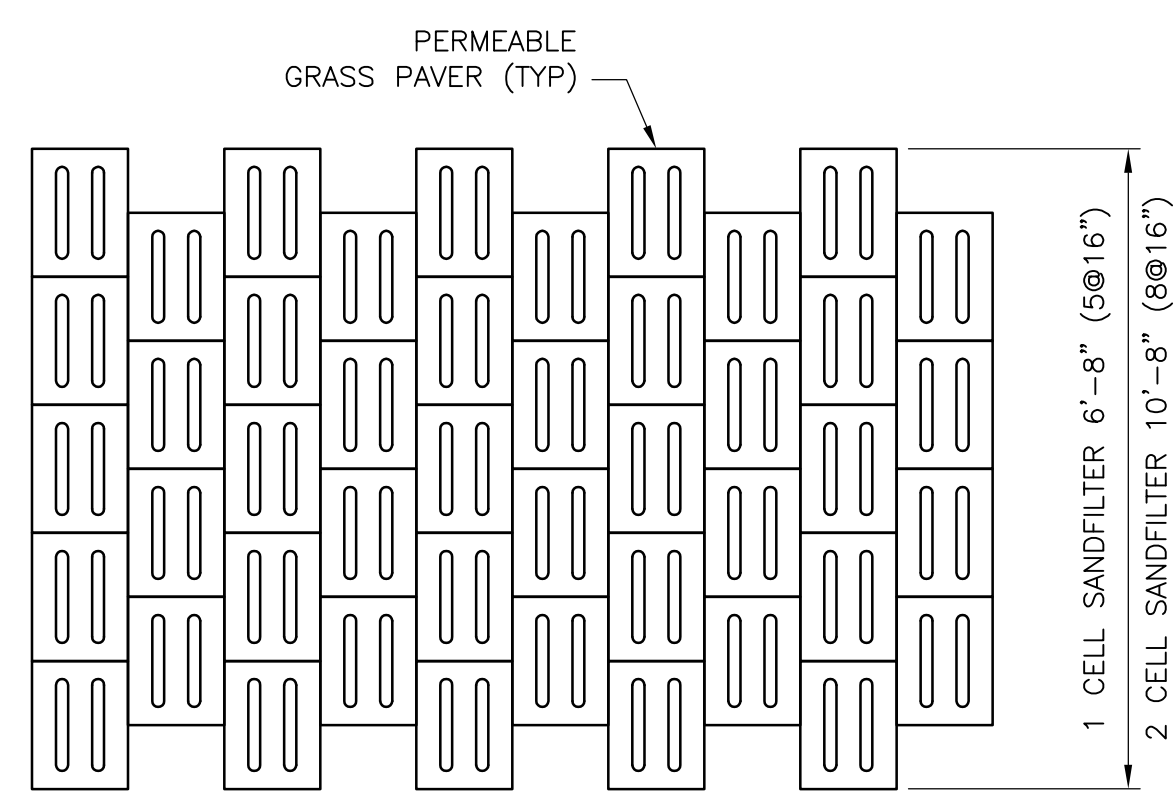
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 SPRINGWATER SUBDIVISION  
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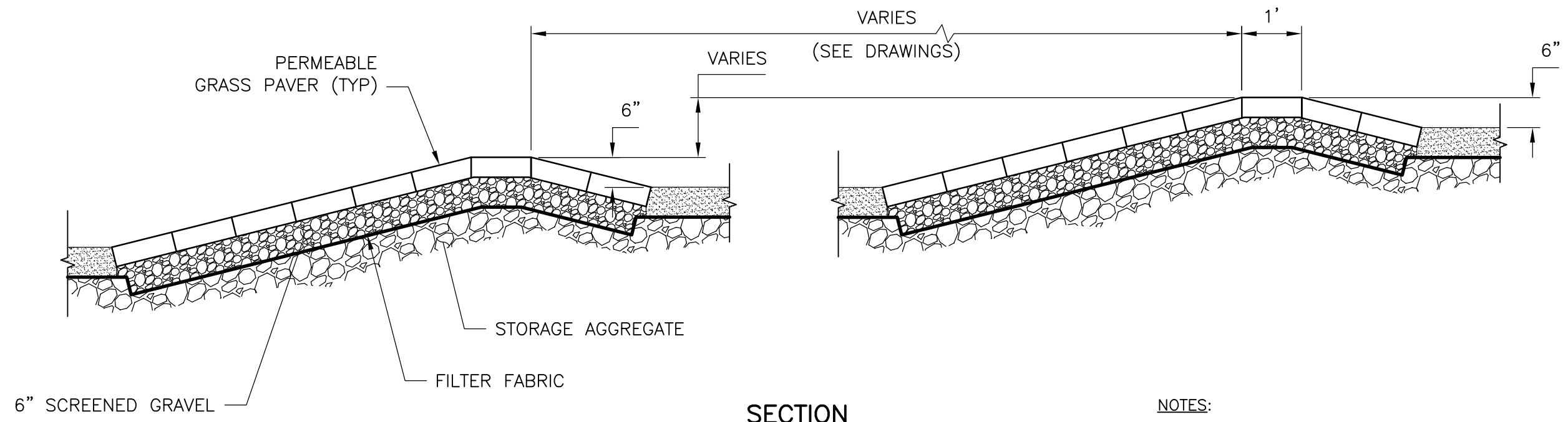
SAND FILTER DETAILS  
 SHEET NO. C-4

PROJECT NO. 1400-100237  
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 SHEET NO. C-4

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**PLAN**



**SECTION**

**TERRACED SAND FILTER  
DETAIL A**  
1/2" = 1'-0"

**NOTES:**

- FOR NON-TERRACED SAND FILTER IN A FILL SECTION, A BERM AT LEAST 3" ABOVE CATCH BASIN SHALL BE CONSTRUCTED TO PREVENT OVERTOPPING ON TO PRIVATE PROPERTY.
- FOR TERRACED SAND FILTERS IN A FILL SECTION, A BERM AT LEAST 3" ABOVE TOP OF TERRACE SHALL BE CONSTRUCTED TO PREVENT OVERTOPPING ON TO PRIVATE PROPERTY.
- FINAL GRADING AS DIRECTED BY ENGINEER REFER TO PLANS FOR APPROXIMATE CONTOURS AND ELEVATIONS.

NOTE:  
THE SILTSACK WILL BE MANUFACTURED FROM A WOVEN POLYPROPYLENE FABRIC THAT MEETS OR EXCEEDS THE FOLLOWING SPECIFICATIONS.

**REGULAR FLOW SILTSACK**

(FOR AREAS OF LOW TO MODERATE PRECIPITATION AND RUN-OFF)

PROPERTIES	REQUIRED VALUE	TEST METHOD
GRAB TENSILE STRENGTH	ASTM D-4632	300 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20%
PUNCTURE	ASTM D-4833	120 LBS
MULLEN BURST	ASTM D-3786	800 PSI
TRAPEZOID TEAR	ASTM D-4533	120 LBS
UV RESISTANCE	ASTM D-4355	80%
APPARENT OPENING SIZE	ASTM D-4751	40 US SIEVE
FLOW RATE	ASTM D-4491	40 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	0.55 SEC -1

**HI-FLOW SILTSACK**

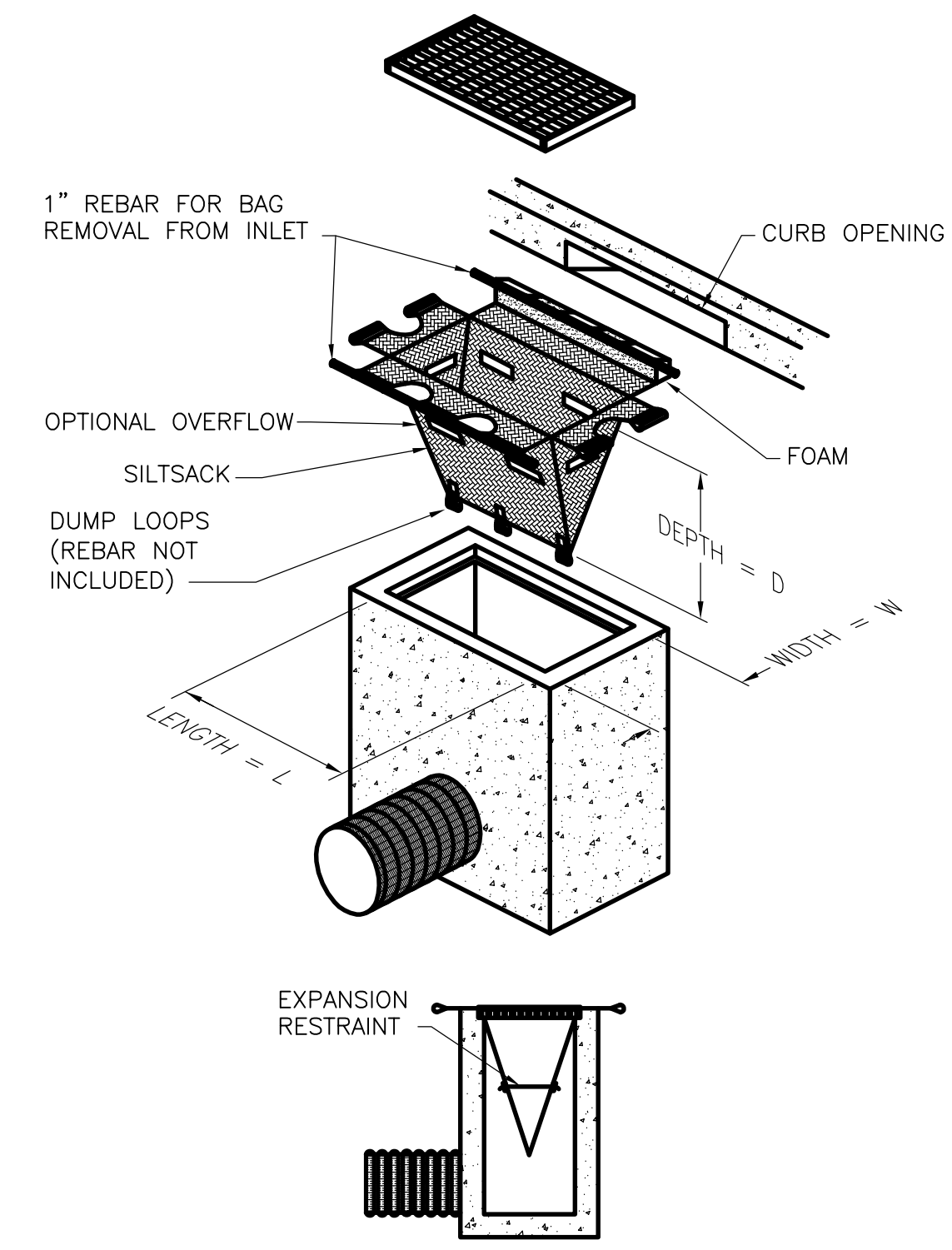
(FOR AREAS OF MODERATE TO HEAVY PRECIPITATION AND RUN-OFF)

PROPERTIES	REQUIRED VALUE	TEST METHOD
GRAB TENSILE STRENGTH	ASTM D-4632	265 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20%
PUNCTURE	ASTM D-4833	135 LBS
MULLEN BURST	ASTM D-3786	420 PSI
TRAPEZOID TEAR	ASTM D-4533	45 LBS
UV RESISTANCE	ASTM D-4355	90%
APPARENT OPENING SIZE	ASTM D-4751	20 US SIEVE
FLOW RATE	ASTM D-4491	200 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	1.5 SEC -1

**OIL ABSORBENT SILTSACK**

(FOR AREAS WHERE THERE IS A CONCERN FOR OIL RUN-OFF OR SPILLS)

IT IS THE INTENT OF THE PLANS AND SPECIFICATIONS THAT THE CONTRACTOR INSTALL THE REBAR AS SHOWN IN THIS DETAIL TO PROVIDE A FULLY FUNCTIONING UNIT. ALL COSTS ASSOCIATED WITH FURNISHING, CLEANING AS MANY TIMES AS REQUIRED, DISPOSAL OF SEDIMENT, AND REMOVING THE INLET FILTER WHEN NO LONGER NEEDED IS INCLUDED IN THE ITEM OF WORK AND WILL NOT BE PAID FOR SEPARATELY.



**SIDE VIEW INSTALLED**

**INSTALLATION DETAIL**

**SILTSACK**

**DETAIL B**  
NTS

STORM STRUCTURE TABLE					
STRUCTURE NUMBER	TYPE	STORM STATION	RIM	DEPTH	INVERTS
STMH-1	6' MH COVER B	0+00.0	802.12	6.8	INV IN: 796.05 30" RCP (S) INV IN: 796.15 12" RCP (E) INV IN: 798.34 12" RCP (SE) INV OUT: 796.05 30" EXIST RCP (N)
STMH-2	6' MH COVER B	0+41.8	802.84	7.1	INV IN: 797.97 15" EXIST RCP (W) INV IN: 796.67 24" RCP (S) INV IN: 797.45 12" RCP (SE) INV OUT: 796.34 30" RCP (N)
STMH-3	8' MH COVER B	0+30.3	802.48	6.8	INV IN: 796.28 36" RCP (E) INV IN: 797.96 12" RCP (S) INV IN: 797.11 12" RCP (E) INV OUT: 796.28 12" RCP (W)
STMH-4	5' MH COVER B	1+57.3	809.81	14.0	INV IN: 803.00 12" RCP (E) INV IN: 805.00 12" RCP (NE) INV IN: 805.34 12" RCP (SE) INV OUT: 796.41 36" RCP (W)
STMH-5	4' MH COVER B	3+01.4	817.43	6.0	INV IN: 812.20 12" RCP (S) INV OUT: 812.00 12" RCP (W)
STMH-6	4' MH COVER B	3+29.1	818.22	6.1	INV IN: 812.75 12" RCP (S) INV IN: 813.81 12" RCP (SE) INV OUT: 812.75 12" RCP (N)
STMH-7	4' MH COVER B	0+25.5	815.37	6.4	INV IN: 809.60 12" RCP (NW) INV OUT: 809.50 12" RCP (E)
STMH-8	6' MH COVER B	1+17.8/1+00.0	813.07	14.7	INV IN: 805.75 12" RCP (S) INV IN: 799.20 27" RCP (E) INV IN: 808.84 12" RCP (SE) INV IN: 807.20 12" RCP (NW) INV IN: 808.50 12" RCP (W) INV OUT: 799.00 36" RCP (N)
STMH-9	4' MH COVER B	2+24.2	811.87	12.3	INV IN: 800.06 27" RCP (E) INV IN: 805.55 12" RCP (NE) INV IN: 805.83 12" RCP (NW) INV OUT: 800.06 27" RCP (W)
STMH-11	4' MH COVER B	8+93.2	824.65	7.2	INV IN: 820.12 12" RCP (E) INV IN: 819.90 12" RCP (SW) INV OUT: 818.00 12" RCP (N)
STMH-12	4' MH COVER B	8+47.8	823.63	7.5	INV IN: 816.81 12" RCP (S) INV IN: 819.31 12" RCP (W) INV OUT: 816.81 12" RCP (N)
I-13	4' INLET/JUNCTION CHAMBER COVER K	7+08.4	819.19	7.0	INV IN: 812.74 12" RCP (S) INV OUT: 812.74 12" RCP (N)
STMH-14	4' MH COVER B	5+95.1	815.76	8.9	INV IN: 808.95 12" RCP (S) INV IN: 811.71 12" RCP (SW) INV OUT: 807.50 12" RCP (N)
I-15	4' INLET/JUNCTION CHAMBER COVER K	5+61.9	814.65	10.5	INV IN: 806.56 12" RCP (S) INV OUT: 806.56 12" RCP (N)
STMH-16	5' MH COVER B	4+13.8	810.16	12.0	INV IN: 798.70 36" RCP (S) INV IN: 805.57 12" RCP (E) INV OUT: 798.70 36" RCP (N)
STMH-17	5' MH COVER B	3+03.2	806.94	9.2	INV IN: 798.35 36" RCP (S) INV IN: 802.36 12" RCP (E) INV OUT: 798.35 36" RCP (N)
STMH-18	5' MH COVER B	1+89.4	805.73	8.2	INV IN: 798.00 36" RCP (S) INV IN: 801.12 12" RCP (E) INV IN: 801.33 12" RCP (W) INV IN: 800.99 12" RCP (SW) INV IN: 800.99 12" RCP (SE) INV OUT: 798.00 36" RCP (N)
STMH-19	5' MH COVER B	0+86.7	806.55	9.5	INV IN: 797.56 36" RCP (S) INV IN: 800.83 12" RCP (E) INV OUT: 797.56 36" RCP (N)
STMH-20	8' MH COVER B	0+00.0	807.12	10.6	INV IN: 797.20 36" RCP (S) INV IN: 796.97 42" EXIST RCP (E) INV OUT: 796.97 42" EXIST RCP (W)

REV. NO.	DATE	DRWN	CHKD	REMARKS



DESIGNED BY: J. ZAWACKI  
 DRAWN BY: D. KRAFT  
 SHEET CHK'D BY: J. ZAWACKI  
 CROSS CHK'D BY: M. TENBROEK  
 APPROVED BY: J. ZAWACKI  
 DATE: MAY 2014



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CITY OF ANN ARBOR, MICHIGAN  
 SPRINGWATER SUBDIVISION  
 IMPROVEMENTS PROJECT

CIVIL DETAILS  
 C-5

PROJECT NO. 1400-100237  
 FILE NAME: CO05FLDT.DWG  
 SHEET NO.  
 C-5



**CONSTRUCTION SEQUENCE:**

THE CONTRACTOR SHALL REVIEW THE TRAFFIC MAINTENANCE PLANS OF THE CONTRACT DOCUMENTS AND NOTE THAT EACH OF THE FOUR CONSTRUCTION STAGES (1-4) ARE PROVIDED TO MAINTAIN ACCESS AT ALL TIMES TO RESIDENCES. THE DRIVEWAYS ARE TO BE MAINTAINED AT ALL TIMES. WHEN DRIVEWAY ACCESS IS RESTRICTED DUE TO UTILITY AND ROAD CONSTRUCTION RESIDENTS MUST BE NOTIFIED AT LEAST A DAY IN ADVANCE SO VEHICLES CAN BE MOVED PRIOR TO CLOSURE. DRIVES ARE TO BE TEMPORARILY PUT BACK AS SOON AS POSSIBLE AND OPENED FOR RESIDENT USE AT THE END OF THE DAY. FOR DRIVEWAY CONSTRUCTION USING HIGH-EARLY CONCRETE, THE CLOSURE SHALL BE NO MORE THAN THREE DAYS OR AS DIRECTED BY ENGINEER. THE CONTRACTOR TO ADJUST THE LIMITS OR SEQUENCING OF CONSTRUCTION IN ORDER TO COMPLETE THE WORK MORE EFFICIENTLY. CHANGES TO THE RECOMMENDED STAGES MUST BE APPROVED IN WRITING BY THE ENGINEER PRIOR TO CONSTRUCTION AND MUST ASSURE THAT ACCESS IS MAINTAINED AS DESCRIBED ABOVE. ALL WATER MAIN AND MANHOLE COVERS SHALL BE CONSTRUCTED TO ROADWAY FINISH GRADE WITH A PLASTIC DRUM DELINEATING THEIR LOCATION. REMOVE, FLOWABLE FILL, OR ABANDON WATER MAIN AND STORM SEWER AS SHOWN ON PLANS ONCE DECOMMISSIONED AND APPROVED BY ENGINEER.

**STAGE 1**

STAGE 1 SHALL CONSIST OF CONSTRUCTING WATER MAIN AND STORM SEWER ON PACKARD ROAD AND THE APPROACH FROM NORDMAN STREET, APPROXIMATELY STATION 10+60.

- THIS WORK WILL REQUIRE MAINTENANCE OF TRAFFIC PLANS SUBMITTED ONE WEEK PRIOR TO COMMENCING WORK FOR REVIEW, APPROVAL AND NOTIFICATION TO PUBLIC. LANE CLOSURE PERMIT TO BE FILLED OUT 48 HOURS IN ADVANCE. LANE CLOSURES SHALL OCCUR ONLY ONCE AND FOR NO MORE THAN THREE DAYS OR AS APPROVED BY THE ENGINEER. ONE LANE OF TRAFFIC TO BE MAINTAINED IN EACH DIRECTION SIMILAR TO MICHIGAN DEPARTMENT OF TRANSPORTATION WORK ZONE TYPICALS M0020A, M0040A AND M0500A. LIMITS OF SIGNING TO BE WITHIN EISENHOWER PARKWAY TO THE WEST AND FERNWOOD AVENUE TO THE EAST.
- INSTALLATION OF TRAFFIC CONTROL DEVICES, MAINTENANCE OF TRAFFIC PLAN, AND SOIL EROSION CONTROL DEVICES FOR STAGE 1 LIMITS.
- CONSTRUCT WATER MAIN AS SHOWN ON PLANS INCLUDING PROPOSED CONNECTIONS WITHIN PACKARD ROAD. CAP PROPOSED WATER MAIN AT STAGE 1 LIMITS ON NORDMAN ROAD FOR TIE-IN DURING STAGE 2. PRESSURE AND BACTERIA TEST PER WATER MAIN SPECIFICATION.
- CONSTRUCT STORM SEWER AS SHOWN ON PLANS INCLUDING PROPOSED CONNECTIONS TO EXISTING WITHIN PACKARD ROAD. COVER PROPOSED STORM SEWER FOR TIE-IN DURING STAGE 2.
- CONSTRUCT ROADWAY AS SHOWN ON PLANS UP THROUGH TOP COURSE OF HMA WITHIN PACKARD ROAD AND THE BASE COURSE OF HMA WITHIN NORDMAN ROAD, EXCEPT AT LIMITS OF STAGE 1 TO FACILITATE STAGE 2 UTILITY CONSTRUCTION.
- CLEAN-UP AND RESTORE DISTURBED AREAS IN STAGES.

**STAGE 2**

STAGE 2 SHALL CONSIST OF CONSTRUCTING IMPROVEMENTS ON THE FULL LIMIT OF BUTTERNUT STREET AND NORDMAN ROAD FROM ITS INTERSECTION WITH BUTTERNUT STREET, APPROXIMATELY STATION 15+75, TO PACKARD ROAD APPROACH.

- INSTALLATION OF TRAFFIC CONTROL DEVICES, MAINTENANCE OF TRAFFIC PLAN, AND SOIL EROSION CONTROL DEVICES FOR STAGE 2 LIMITS. CONSTRUCTION SHALL BE PHASED TO LIMIT THE IMPACT ON RESIDENTS WITH FULL ACCESS MAINTAINED IN LOCATIONS WITHOUT CONSTRUCTION PROGRESS FOR THREE DAYS AS DETERMINED BY ENGINEER. ALL COSTS TO REMOVE TRAFFIC CONTROL DEVICES AND REOPEN ROADWAY SHALL BE BORNE BY THE CONTRACTOR.
- CONSTRUCT WATER MAIN AS SHOWN ON PLANS INCLUDING PROPOSED CONNECTIONS TO EXISTING AT CARDINAL AVENUE AND MCCOMB STREET ALONG WITH STAGE 1 LIMIT AT PACKARD ROAD. CAP PROPOSED WATER MAIN AT STAGE 2 LIMITS ON NORDMAN ROAD SOUTH OF BUTTERNUT STREET FOR TIE-IN DURING STAGE 3. PRESSURE AND BACTERIA TEST PER WATER MAIN SPECIFICATION.
- CONSTRUCT STORM SEWER AS SHOWN ON PLANS INCLUDING PROPOSED CONNECTIONS TO EXISTING AT CARDINAL AVENUE, SPRINGBROOK AVENUE, AND NORDMAN ROAD, ALONG WITH STAGE 1 LIMIT AT PACKARD ROAD. CONNECT PROPOSED STORM SEWER TO EXISTING PIPE, UTILIZING FLEXIBLE STORM SEWER CONNECTORS. TIE EXISTING NORDMAN STORM SEWER TO INLET OF JUNCTION STRUCTURE PRIOR TO BACKFILLING FOR TIE-IN DURING STAGE 3.
- CONSTRUCT ROADWAY AS SHOWN ON PLANS UP THROUGH THE BASE COURSE OF HMA, EXCEPT AT THE TEMPORARY UTILITY TIE-IN LOCATIONS TO STAGE 3 AND 4.
- CLEAN-UP AND RESTORE DISTURBED AREAS IN STAGE 2.

**STAGE 3**

STAGE 3 SHALL CONSIST OF CONSTRUCTING IMPROVEMENTS ON NORDMAN ROAD FROM THE STAGE 2 LIMITS TO REDWOOD AVENUE.

- INSTALLATION OF TRAFFIC CONTROL DEVICES, MAINTENANCE OF TRAFFIC PLAN, AND SOIL EROSION CONTROL DEVICES FOR STAGE 3 LIMITS.
- CONSTRUCT WATER MAIN AS SHOWN ON PLANS. TIE-IN WATER MAIN TO PORTION CONSTRUCTED DURING STAGE 2. PRESSURE AND BACTERIA TEST PER WATER MAIN SPECIFICATION.
- CONSTRUCT STORM SEWER AS SHOWN ON PLANS. TIE-IN PROPOSED STORM SEWER TO PORTION CONSTRUCTED DURING STAGE 2.
- CONSTRUCT ROADWAY AS SHOWN ON PLANS UP THROUGH THE BASE COURSE OF HMA.
- CLEAN-UP AND RESTORE DISTURBED AREAS IN STAGES.

**STAGE 4**

- PLACE LEVELING/TOP COURSE OF HMA FOR ENTIRE PROJECT.
- REMOVE ALL CONSTRUCTION SOIL EROSION CONTROL AND SIGNAGE.
- OPEN ALL ROADS TO NORMAL TRAFFIC OPERATIONS.

**CONSTRUCTION NOTES:**

- DRIVEWAYS AND ENTRANCES TO BUILDINGS, REAL PROPERTY, AND THE LIKE SHALL NOT BE BLOCKED EXCEPT FOR SHORT DURATIONS AND ONLY WHEN APPROVED BY THE ENGINEER. VEHICULAR AND PEDESTRIAN ACCESS SHALL BE MAINTAINED AT ALL TIMES. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE ALL NECESSARY DRIVEWAY CLOSURES WITH THE PROPERTY OWNER(S) AND RESIDENT(S) IN THE AREA OF CONSTRUCTION.
- THE LOCATIONS AND DEPTH OF ALL EXISTING UTILITIES AND SERVICE LEADS ARE TO BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
- LOCATION AND DEPTH OF UTILITIES AS DEPICTED ON THE PLANS IS APPROXIMATE AND SHOWN ACCORDING TO THE BEST INFORMATION AVAILABLE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO EXCAVATE AHEAD AND ADJUST DEPTH OF CONFLICT UTILITIES ACCORDINGLY. ANY DAMAGE TO UTILITIES IS THE CONTRACTOR'S RESPONSIBILITY TO AVOID AND/OR REPAIR AS NECESSARY.
- THE CONTRACTOR IS TO TAKE SPECIAL CARE TO PROTECT THE EXISTING WATER MAIN AND BE RESPONSIBLE FOR MAINTAINING CONSISTENT WATER SERVICE.
- DURING NON-WORKING HOURS NO TRENCH SHALL REMAIN OPEN; ANY OPEN TRENCH SHALL BE PROPERLY SECURED WITH PROTECTIVE FENCING. THIS WORK SHALL BE INCLUDED IN THE ITEM OF WORK "PROTECTIVE FENCING".
- TRENCHES FOR TRANSFERRING WATER SERVICES SHALL BE EXCAVATED TO MIOSHA AND CITY OF ANN ARBOR FIELD SERVICES REQUIREMENTS.
- CITY OF ANN ARBOR FIELD SERVICES WILL INSTALL THE CORPORATION AND COPPER SERVICE LEAD(S) TO TRANSFER THE CONNECTION(S). IF AN EXISTING WATER SERVICE IS FOUND TO BE FAILING OR IS NOT COPPER, THE LEAD WILL BE REPLACED TO THE CURB BOX BY FIELD SERVICES.
- FOR THE INSTALLATION OF CORPORATIONS, OR ANY OTHER RELATED ACTIVITIES, THE CONTRACTOR SHALL NOT RECEIVE ADDITIONAL COMPENSATION FOR DELAYS DUE TO THE SCHEDULING OF OR COORDINATION WITH THE CITY OF ANN ARBOR FIELD SERVICES.
- THE CONTRACTOR SHALL BACKFILL TRENCHES IN ACCORDANCE WITH TRENCH DETAIL SPECIFIED ON PLANS. THIS WORK SHALL BE INCLUDED IN THE ITEM OF WORK "EXCAVATE AND BACKFILL FOR WATER SERVICE TAP AND LEAD". ALL CONCRETE REMOVALS AND REPLACEMENTS REQUIRED FOR THIS WORK WILL BE PAID FOR SEPARATELY.
- ALL DUCTILE IRON PIPE AND FITTINGS SHALL BE POLYETHYLENE WRAPPED PER ANSI/AWWA C105/A21.5.
- COR-BLUE BOLTS TO BE USED AT ALL MECHANICAL WATER MAIN JOINTS AT HYDRANTS AND MEGALUG FITTINGS.
- AFTER ALL WATER SERVICES ARE TRANSFERRED, THE CONTRACTOR SHALL ABANDON THE EXISTING WATER MAIN. REFERENCE THE PUBLIC SERVICES DEPARTMENT STANDARD SPECIFICATIONS FOR WATER MAIN ABANDONMENT PROCEDURES. CAPS AND PLUGS SHALL BE INSTALLED BY THE CONTRACTOR WHERE SHOWN ON THE PLANS AND SHALL BE INCLUDED IN THE ITEM OF WORK FOR WATER MAIN ABANDONMENT OR AS DIRECTED BY ENGINEER. LINE STOPS TO BE PROVIDED AS NECESSARY AND INCLUDED IN COST OF WORK FOR WATER MAIN ABANDONMENT.
- THE CONTRACTOR SHALL CONSTRUCT, FLUSH, AND BACTERIOLOGICALLY TEST THE WATER MAIN PER DETAILED SPECIFICATION "WATER MAIN INSTALLATION AND TESTING" AS APPROVED BY THE ENGINEER. ALL CHLORINATED WATER SHALL BE DISCHARGED DIRECTLY INTO AN APPROVED SANITARY SEWER. THE CONTRACTOR SHALL SUPPLY ALL NECESSARY HOSES, FITTINGS AND THE LIKE TO ACCOMPLISH THIS WORK.
- WATER MAIN FITTINGS, OTHER THAN THOSE SPECIFICALLY LISTED AS SEPARATE PAY ITEMS, WHICH ARE REQUIRED TO COMPLETE THE WORK, SUCH AS BLOW-OFF ASSEMBLIES, CONCRETE THRUST BLOCKS, SOLID SLEEVES AND MECHANICAL PLUGS, SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE PIPE PAY ITEMS.
- "NO PARKING" SIGNS SHALL BE INSTALLED BY THE CONTRACTOR AT LOCATIONS AS APPROVED OR DIRECTED BY THE ENGINEER. ALL SIGNS SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAILED SPECIFICATION.
- POSTAL DELIVERY AND REFUSE PICKUP SERVICE SHALL BE MAINTAINED AT ALL TIMES BY THE CONTRACTOR.
- ALL FITTINGS, HYDRANTS, VALVES AND CASTINGS REMOVED DURING CONSTRUCTION ARE THE PROPERTY OF THE CITY OF ANN ARBOR. THE CONTRACTOR WITHIN 48 HOURS SHALL DELIVER TO CITY OF ANN ARBOR FIELD OPERATIONS AND MAINTENANCE FACILITY AT THE W.R. WHEELER SERVICE CENTER LOCATED AT 4251 STONE SCHOOL ROAD.
- WHERE STREET CURBS ARE UNDERMINED DUE TO CONSTRUCTION ACTIVITIES, THEY SHALL BE REMOVED AND REPLACED AS DIRECTED BY THE ENGINEER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTINUOUS MAINTENANCE OF THE TEMPORARY ROAD SURFACE AND SOIL EROSION CONTROL MEASURES WITHIN THE CONSTRUCTION AREA UNTIL THE FULL COMPLETION OF THE PROJECT. THIS WORK SHALL BE INCLUDED IN THE ITEM OF WORK "GENERAL CONDITIONS".
- ALL CURB, SIDEWALK, DRIVEWAY APPROACH REMOVALS SHALL BE APPROVED BY ENGINEER BEFORE THE WORK IS DONE.
- SAWED SEWER PIPE CONNECTIONS SHALL BE COUPLED WITH A FERNCO FLEXIBLE COUPLING AND A STAINLESS STEEL SHEAR RING.
- THE LOCATION OF MATERIAL STOCK PILES AND ON-SITE STAGING AREAS TO BE APPROVED BY THE ENGINEER.
- FOR MAINLINE PAVING, THE ENGINEER WILL DIRECT THE LAYOUT OF THE LONGITUDINAL JOINTS DURING CONSTRUCTION.
- ALL STRUCTURES SHALL RECEIVE NEW CASTINGS AS DIRECTED BY THE ENGINEER, AS SPECIFIED ON THE STANDARD CASTING SCHEDULE. THE EXISTING CASTINGS ARE THE PROPERTY OF THE CITY OF ANN ARBOR. THE CONTRACTOR SHALL DELIVER TO CITY OF ANN ARBOR FIELD OPERATIONS AND MAINTENANCE FACILITY AT THE W.R. WHEELER SERVICE CENTER LOCATED AT 4251 STONE SCHOOL ROAD.
- PAYMENT FOR DRAINAGE STRUCTURE SUMPS, WHERE SPECIFIED, SHALL BE INCLUDED IN THE PAYMENT FOR THE VARIOUS DRAINAGE STRUCTURE SIZED AND OR TYPES.
- WHERE SEWER AND WATER MAIN ARE TO BE REMOVED & REPLACED OR ADDED, ALL PIPE SHALL BE INSTALLED USING TRENCH DETAIL DETAILED IN THE SPECIFICATIONS OR SHOWN ON PLANS. BACKFILL FOR SEWER AND WATER CONSTRUCTION SHALL BE MDOT GRANULAR MATERIAL, CLASS II.
- EXISTING STREET NAME, GUIDE, AND REGULATORY SIGNS, AND MAILBOXES WHICH CONFLICT WITH THE PROPOSED CONSTRUCTION SHALL BE REMOVED PRIOR TO CONSTRUCTION, STORED IN A MANNER WHICH WILL PREVENT DAMAGE, AND RE-SET IN LOCATIONS AS DIRECTED BY THE ENGINEER. THIS WORK WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN "MACHINE GRADING, MODIFIED" AND "GENERAL CONDITIONS".
- IN AREAS WHERE EDGE DRAIN CANNOT BE INSTALLED IN ACCORDANCE WITH CITY OF ANN ARBOR DETAIL SD-TD-10, THE EDGE DRAIN SHALL BE INSTALLED AT THE DEPTH AS INDICATED ON THE PLANS, OR AS DIRECTED BY ENGINEER, IN NO CASE SHALL THE EDGE DRAIN BE INSTALLED AT A GRADE LESS THAN 0.50% OR AT A DEPTH OF LESS THAN 3.25' BELOW TOP OF PROPOSED PAVEMENT.

**SOIL EROSION CONTROL NOTES:**

**GENERAL**

- THE CONTRACTOR SHALL IMPLEMENT AND MAINTAIN THE SOIL EROSION CONTROL MEASURES AS SHOWN ON THE PLANS AT ALL TIMES DURING CONSTRUCTION ON THIS PROJECT. ANY MODIFICATIONS OR ADDITIONS TO THE SOIL EROSION CONTROL MEASURES DUE TO CONSTRUCTION OR CHANGED CONDITIONS SHALL BE COMPLIED WITH AS REQUIRED OR DIRECTED BY THE OWNER, PROJECT ENGINEER, OR THE CITY OF ANN ARBOR. THE CONTRACTOR IS REQUIRED TO OBTAIN A SOIL EROSION CONTROL PERMIT ANYTIME THE DISTURBED AREA EXCEEDS 1 ACRE.
- ALL SOIL EROSION AND SEDIMENTATION CONTROL WORK SHALL CONFORM TO THE PERMIT REQUIREMENTS OF THE CITY OF ANN ARBOR, CHAPTER 63, AND THE LAWS OF THE STATE OF MICHIGAN.
- DAILY OR AFTER STORM EVENTS INSPECTIONS SHALL BE MADE BY THE CONTRACTOR. PERIODIC INSPECTIONS MAY BE MADE BY THE OWNER/PROJECT ENGINEER TO DETERMINE THE EFFECTIVENESS OF EROSION AND SEDIMENTATION CONTROL MEASURES. ANY NECESSARY CORRECTIONS SHALL BE MADE WITHOUT DELAY, AND WITHOUT ADDITIONAL COST TO THE CITY OF ANN ARBOR.
- EROSION AND SEDIMENTATION FROM WORK ON THE SITE SHALL BE CONTAINED ON THE SITE AND NOT BE ALLOWED TO COLLECT ON ANY OFF-SITE AREAS OR WATERWAYS. DURING CONSTRUCTION OF ANY PORTION OF THE PROJECT, ADJOINING ROADS SHALL BE MAINTAINED FREE OF DIRT, SILT AND CONSTRUCTION DEBRIS. CONTRACTOR IS REQUIRED TO USE VACUUM SWEEPER EQUIPMENT FOR CLEANING CONSTRUCTION SITE AND ADJOINING ROADS. THE USE OF A BROOM SWEEPER IS NOT PERMITTED.
- ALL MUD/DIRT TRACKED ONTO ROADS FROM THE SITE DUE TO CONSTRUCTION, SHALL BE PROMPTLY REMOVED BY THE CONTRACTOR. IF SO ORDERED, THE CONTRACTOR SHALL EMPLOY A MECHANICAL STREET SWEEPER AT NO ADDITIONAL COST TO THE CITY OF ANN ARBOR.
- RESTORATION OF ALL DISTURBED AREAS, INCLUDING PLACEMENT OF TOPSOIL, SEED, FERTILIZER AND MULCH AND/OR SOD SHALL BE DONE WITHIN 5 DAYS OF THE COMPLETION OF EACH STAGE.
- CONSTRUCTION OPERATIONS SHALL BE SCHEDULED AND PERFORMED SO THAT PREVENTATIVE SOIL EROSION CONTROL MEASURES ARE IN PLACE PRIOR TO EXCAVATION IN CRITICAL AREAS AND TEMPORARY STABILIZATION MEASURES ARE IN PLACE IMMEDIATELY FOLLOWING BACKFILLING OPERATIONS.
- SPECIAL PRECAUTIONS WILL BE TAKEN IN THE USE OF CONSTRUCTION EQUIPMENT TO PREVENT SITUATIONS THAT PROMOTE EROSION.
- PROPER DUST CONTROL SHALL BE MAINTAINED DURING CONSTRUCTION BY USE OF WATER TRUCKS AND/OR CHLORIDE AS REQUIRED OR AS DIRECTED BY ENGINEER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL TEMPORARY SOIL EROSION CONTROL MEASURES AND REMOVAL OF SOME UPON AUTHORIZED COMPLETION OF THE PROJECT. COMPLETION OF THE PROJECT WILL NOT BE AUTHORIZED UNTIL ALL SITE WORK AND UTILITY CONSTRUCTION IS COMPLETE AND ALL SOILS ARE STABILIZED.
- THE CONTRACTOR SHALL NOT GRADE INTO ADJACENT PROPERTIES. SILT FENCE SHALL BE INSTALLED AND MAINTAINED TO PREVENT GRADING, EROSION AND SEDIMENTATION INTO THEM.
- TREE PROTECTION FENCING MUST REMAIN INTACT UNTIL RESTORATION OF THE SITE IS COMPLETE.
- DURING CONSTRUCTION, ALL ROADS SHALL BE PROTECTED FROM UNVEGETATED AREAS WASHING ONTO ROAD SURFACE BY PLACEMENT OF SILT FENCE BEHIND CURB OR A 10 FOOT WIDE STRAW MULCH BANK BEHIND CURB OR OTHER ENGINEER APPROVED METHOD.

**SEQUENCE OF EROSION CONTROL MEASURES:**

- INSTALL SILT FENCE, TREE PROTECTION FENCING AND INLET FILTERS ON EXISTING STORM INLETS PRIOR TO ANY CLEARING OF EARTH MOVING OPERATION.
- INSTALL INLET FILTERS IMMEDIATELY FOLLOWING INSTALLATION OF PROPOSED STORM DRAINAGE SYSTEM.
- CONTRACTOR TO CONTINUALLY MAINTAIN EROSION AND SEDIMENTATION CONTROL MEASURES, AS REQUIRED TO ALLOW DRAINAGE AND SEDIMENT REMOVAL. REMOVE ANY ACCUMULATED SEDIMENT.
- STRIP AND CLEAR - MAINTAIN EROSION CONTROL MEASURES AROUND TEMPORARY STOCK PILES.
- ROUGH GRADE.
- INSTALL STORMWATER MANAGEMENT SYSTEM.
- CONNECT STORMWATER MANAGEMENT SYSTEM.
- ENSURE ALL SOIL IS STABILIZED. REMOVE ALL TEMPORARY SOIL EROSION CONTROL MEASURES.

**TEMPORARY SEEDING**

- SEED IN ACCORDANCE WITH PROJECT DRAWINGS AND SPECIFICATIONS.
- ANY DISTURBED AREA NOT PAVED, SEED, MULCHED, SODDED OR BUILT UPON BY NOVEMBER 15TH OR JUNE 30TH IS TO BE TEMPORARILY STABILIZED PER SPECIFICATIONS.

**CATCH BASIN/MANHOLE PROTECTION**

- PROTECT STORM SEWER CATCH BASINS WITH APPROVED INLET FILTERS.

**PERMITS REQUIRED TO BE OBTAINED BY THE CONTRACTOR PRIOR TO BEGINNING OF CONSTRUCTION**

PERMIT	ISSUING AUTHORITY
LANE CLOSURE PERMIT	CITY OF ANN ARBOR PROJECT MANAGEMENT UNIT
"NO PARKING" SIGNS PERMIT	CITY OF ANN ARBOR PROJECT MANAGEMENT UNIT
GRADING/SOIL EROSION & SEDIMENTATION CONTROL PERMIT	CITY OF ANN ARBOR CUSTOMER SERVICE
RIGHT OF WAY PERMIT	CITY OF ANN ARBOR CUSTOMER SERVICE

**CITY OF ANN ARBOR STANDARD PLANS:**

STANDARD DETAIL NO.	TITLE	ISSUE DATE
SD-TD-1	UTILITY TRENCH-TYPE I (UNDER BITUMINOUS SURFACE)	11/6/1992
SD-TD-9	UTILITY TRENCH-TYPE IX (CONCRETE ENCASMENT)	11/6/1992
SD-TD-10	TYPICAL EDGE DRAIN TRENCH	11/6/1992
SD-S-1	STANDARD MANHOLE (TYPE I)-FOR 8" TO 30" SEWERS	11/6/1992
SD-S-2	STANDARD MANHOLE (TYPE II)-FOR 36" TO 54" SEWERS	11/6/1992
SD-S-6	SEWER CONNECTION	11/6/1992
SD-S-9	INLET-JUNCTION CHAMBER	11/6/1992
SD-S-10	SINGLE INLET STRUCTURE	11/6/1992
SD-W-1	FIRE HYDRANT ASSEMBLY	1/31/1994
SD-W-2	THRUST BLOCKS	11/6/1992
SD-W-3	GATE WELL FOR MAIN 12" AND SMALLER	1/31/1994
SD-W-5	TAPPING SLEEVE AND VALVE IN WELL	11/6/1992
SD-W-6	PERMANENT BLOW-OFF/AIR RELIEF	1/31/1994
SD-GU-5	STANDARD CASTING SCHEDULE	11/6/1992
SD-GU-6	MANHOLE CASTING ADJUSTMENT	11/6/1992
SD-GU-7	VALVE/MONUMENT BOX ADJUSTMENT	11/6/1992
SD-R-1	BARRIER CURB & GUTTER	11/6/1992
SD-R-2	MOUNTABLE CURB AND GUTTER	11/6/1992
SD-R-3	SPILL-OUT BARRIER CURB & GUTTER	11/6/1992
SD-R-6	TYPE 'M' DRIVE APPROACH	1/31/1994
SD-R-7	TYPE 'L' DRIVE APPROACH	1/31/1994
SD-R-9	SIDEWALK AND CURB & GUTTER JOINTS	1/31/1994
SD-EC-3	SILT FENCE	11/6/1992
SD-M-1	TREE PROTECTION	11/6/1992
SD-M-2	MAILBOX/NEWSPAPER TUBE INSTALLATION AND RELOCATION	11/6/1992

**MDOT STANDARD PLANS:**

STANDARD DETAIL NO.	TITLE	ISSUE DATE
R-7-E	COVER B	11/17/2005
R-12-D	COVER G	10/27/2004
R-15-E	COVER K	09/16/2009
R-28-H	SIDEWALK RAMP AND DETECTABLE WARNING DETAILS	1/25/2013
WZD-125-E	TEMPORARY TRAFFIC CONTROL DEVICES	9/21/2009
PAVE-905-B	LONGITUDINAL LINE TYPES AND PLACEMENT	01/20/2012
M0020A	TABLES FOR "L", "D" AND "B" VALUES	06/2006
M0040A	TYPICAL ADVANCE SIGNING TREATMENT	10/2011
M0500A	TYPICAL TRAFFIC CONTROL	10/2011

**PERMITS REQUIRED TO BE OBTAINED BY THE CITY OF ANN ARBOR PRIOR TO BEGINNING OF CONSTRUCTION**

PERMIT	ISSUING AUTHORITY
M.D.E.Q. WATER MAIN CONSTRUCTION PERMIT	MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
DRAIN USE PERMIT	WASHTENAW COUNTY WATER RESOURCES COMMISSIONER

**CONTRACT INFORMATION**

PUBLIC UTILITIES	OWNER	CONTACT
WATER		DAN WOODEN (734) 794-6350
SANITARY		MARK COZART (734) 794-6350
STORM	CITY OF ANN ARBOR FIELD OPERATIONS SERVICE UNIT W.R. WHEELER SERVICE CENTER 4251 STONE SCHOOL ROAD ANN ARBOR, MI 48108	KEVIN ERNST (734) 794-6350
FORESTRY		STEVEN GOEBEL (734) 794-6350
SIGNS, SIGNALS STREET LIGHTS		CHUCK FOJTIK (734) 794-6361
PRIVATE UTILITIES	OWNER	CONTACT
GAS	DTE ENERGY 17150 ALLEN ROAD MELVINDALE, MI 48122	ROBERT CZAPIEWSKI (734) 544-7818
ELECTRIC	DTE ENERGY WESTERN WAYNE SERVICE CENTER 8001 HAGGERTY ROAD BELLEVILLE, MI 48111	CLAY COMBEE (734) 397-4112
CABLE	COMCAST 27800 FRANKLIN ROAD SOUTHFIELD, MI 48034	RON SUTHERLAND (313) 999-8300
PHONE	AT&T 550 S. MAPLE ROAD ANN ARBOR, MI 48103	ANDY JOHNSON (734) 996-2135
FIBER OPTIC	MCI 2800 N. GLENFILLE ROAD RICHARDSON, TX 75082	DEAN BOYERS (972) 729-6016

**NOTES**

PROJECT NO. 1400-100237  
FILE NAME: C006NOTE.DWG

SHEET NO.

**C-6**

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REV. NO.	DATE	DRWN	CHKD	REMARKS



DESIGNED BY: B. SMITH  
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 SHEET CHK'D BY: J. ZAWACKI  
 CROSS CHK'D BY: B. SMITH  
 APPROVED BY: J. ZAWACKI  
 DATE: MAY 2014



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CITY OF ANN ARBOR, MICHIGAN  
**SPRINGWATER SUBDIVISION IMPROVEMENTS PROJECT**

**NOTES**



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### LEGEND

SYMBOL	FEATURE
	RIGHT OF WAY (ROW)
	PROPERTY LINE
	EXISTING FENCE OR GUARDRAIL, AS LABELED
	EXISTING CONTOUR
	EXISTING INTERMEDIATE CONTOUR
	PROPOSED INDEX CONTOUR
	PROPOSED INTERMEDIATE CONTOUR
	EXISTING GAS LINE
	EXISTING SANITARY SEWER
	EXISTING STORM SEWER
	EXISTING WATER LINE WITH VALVE
	ROAD CENTER LINE AND STATIONING
	PROPOSED CURB AND GUTTER WITH TYPICAL DRIVEWAY
	PROPOSED WATER LINE WITH FITTING AND VALVE
	PROPOSED FIRE HYDRANT CONNECTION
	PROPOSED STORM SEWER WITH MANHOLE AND STATIONING SHOWN, PIPE SIZE AND TYPE AS LABELED ON PLANS
	SILT FENCE
	SAND FILTER SAND FILTER LIMIT AT GFL-8" ELEVATION CATCH BASIN SAND FILTER LIMIT AT PROFILE ELEVATION

### SYMBOL FEATURE

SYMBOL	FEATURE
	SOIL BORING
	CITY OF ANN ARBOR PRIMARY CONTROL STATION POINT
	PROJECT BENCHMARK
	PROJECT CONTROL POINT
	EXISTING MAILBOX
	EXISTING STREET LIGHT
	EXISTING POWER/LIGHT POLE WITH GUY LINES
	EXISTING TREE
	EXISTING LANDMARKED TREE
	EXISTING SHRUB

### REMOVAL/ABANDONMENT HATCH PATTERNS

	INDICATES REMOVAL OF EXISTING CURB
	INDICATES REMOVAL OF EXISTING PAVEMENT
	INDICATES ABANDONMENT OF EXISTING WATER LINE

### ABBREVIATIONS

AAGRS	ANN ARBOR GEODETIC REFERENCE SYSTEM	NTS	NOT TO SCALE
APPROX	APPROXIMATE	POB, P.O.B.	BEGINNING POINT OF ALIGNMENT
AVE.	AVENUE	POE, P.O.E.	END POINT OF ALIGNMENT
AWI	AGGREGATE WEAR INDEX	PC	POINT OF CURVATURE
B/C	BACK OF CURB	PR, PROP	PROPOSED
BM	BENCH MARK	PT	POINT, POINT OF TANGENCY
CB, C.B.	CATCH BASIN	PVC	POLY VINYL CHLORIDE
CFS	CUBIC FEET PER SECOND	PVI	POINT OF VERTICAL INTERSECTION
CI	CAST IRON	R	STORM DRAIN MANHOLE LABEL
CL	CENTER LINE	RCP	REINFORCED CONCRETE PIPE
CONC	CONCRETE	RED	REDUCER
CP	CONTROL POINT	REQ'D	REQUIRED
CTR	CENTER	ROW	RIGHT OF WAY
DI	DUCTILE IRON	RT	RIGHT
DIA	DIAMETER	S	SOUTH
E	EAST	SB	SOUTH BOUND
EB	EAST BOUND	SEC	SECTION
EG	EXISTING GRADE	SF	SQUARE FEET
EL, ELEV	ELEVATION	SS	SANITARY SEWER
EW	EACH WAY	ST	STREET, STORM SEWER
EX, EXIST	EXISTING	STA	STATION
EX.	EXISTING	STMH	STORM SEWER MANHOLE
EXP	EXPANSION	SY, SYD	SQUARE YARD
FG	FINAL GRADE	T&B	TOP AND BOTTOM
FT	FOOT OR FEET	TYP	TYPICAL
G	GAS	V, VERT	VERTICAL
GAL	GALLONS	VOL	VOLUME
GFL	GUTTER FLOW LINE (ELEVATION)	W	WATER, WEST, WIDTH
GVB	GATE VALVE IN BOX	WB	WEST BOUND
GVIW	GATE VALVE IN WELL		
HDPE	HIGH DENSITY POLYETHYLENE		
HMA	HOT MIX ASPHALT		
HOR, HORIZ	HORIZONTAL		
HP	HIGH POINT		
I	INLET		
ID	IDENTIFICATION		
IN	INCH OR INCHES		
INV	INVERT		
JT	JOINT		
L	LENGTH		
LB	POUND		
LF	LINEAR FEET		
LL	LEVEL LANDING		
LP	LOW POINT		
LT	LEFT		
MAX	MAXIMUM		
MH, M.H.	MANHOLE		
MID	MIDPOINT		
MIN	MINIMUM		
N	NORTH		
NB	NORTH BOUND		

REV. NO.	DATE	DRWN	CHKD	REMARKS



DESIGNED BY: C. ANDERSON  
 DRAWN BY: C. ANDERSON  
 SHEET CHK'D BY: J. ZAWACKI  
 CROSS CHK'D BY: B. SMITH  
 APPROVED BY: J. ZAWACKI  
 DATE: MAY 2014

**CDM Smith**  
 CDM Smith Michigan Inc.  
 645 Griswold Street, Suite 3770  
 Detroit, MI 48226  
 Tel: (313) 963-1313



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 734-794-6410  
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CITY OF ANN ARBOR, MICHIGAN  
 SPRINGWATER SUBDIVISION  
 IMPROVEMENTS PROJECT

**LEGEND**

PROJECT NO. 1400-100237  
 FILE NAME: CO07LGND.DWG  
 SHEET NO.  
**C-7**





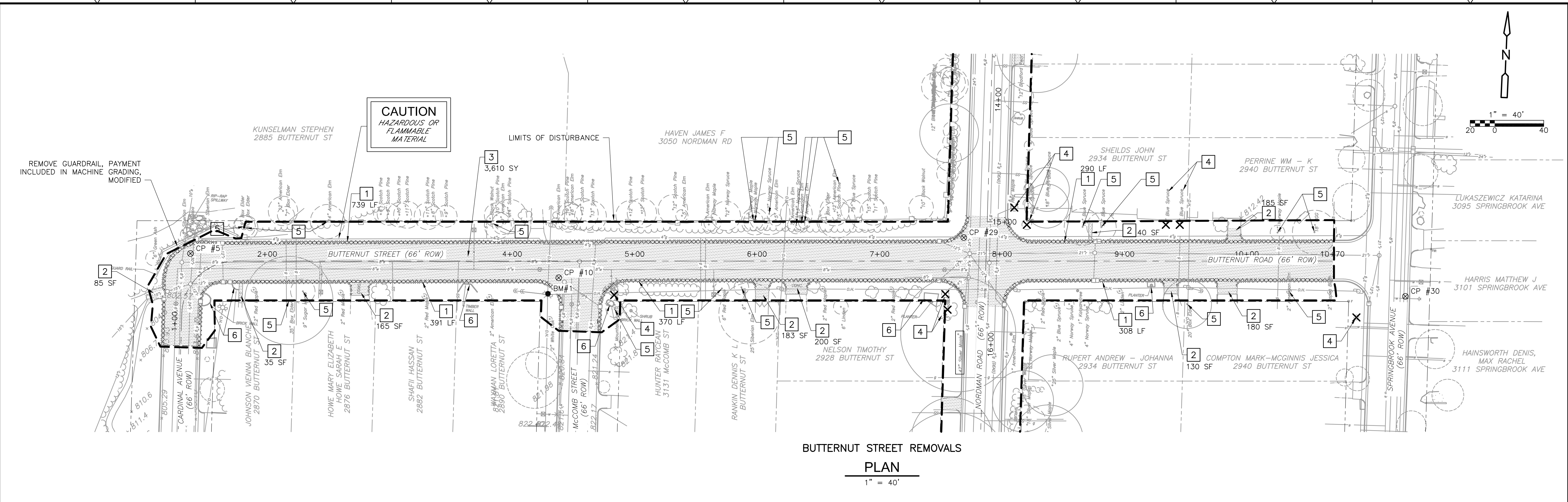




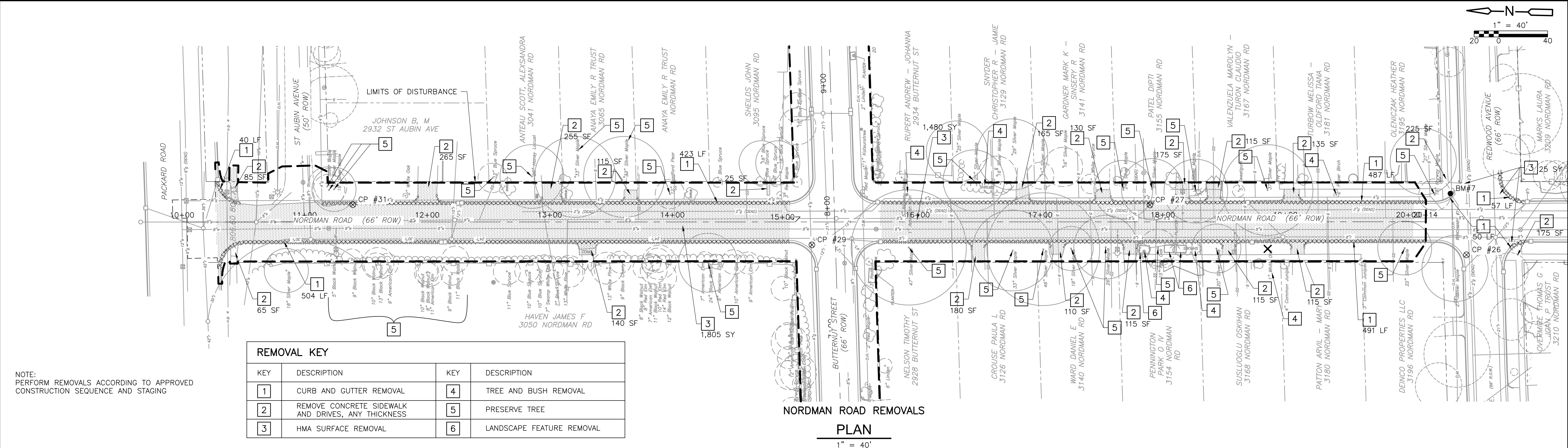




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**BUTTERNUT STREET REMOVALS**  
**PLAN**  
 1" = 40'



**NORMAN ROAD REMOVALS**  
**PLAN**  
 1" = 40'

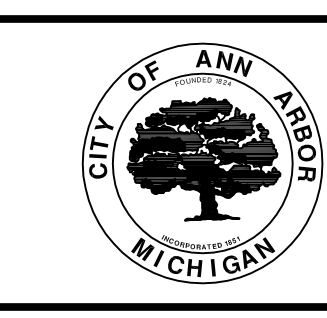
REMOVAL KEY			
KEY	DESCRIPTION	KEY	DESCRIPTION
1	CURB AND GUTTER REMOVAL	4	TREE AND BUSH REMOVAL
2	REMOVE CONCRETE SIDEWALK AND DRIVES, ANY THICKNESS	5	PRESERVE TREE
3	HMA SURFACE REMOVAL	6	LANDSCAPE FEATURE REMOVAL

NOTE:  
PERFORM REMOVALS ACCORDING TO APPROVED CONSTRUCTION SEQUENCE AND STAGING

REV. NO.	DATE	DRWN	CHKD	REMARKS



DESIGNED BY: B. SMITH  
 DRAWN BY: C. ANDERSON  
 SHEET CHK'D BY: J. ZAWACKI  
 CROSS CHK'D BY: B. SMITH  
 APPROVED BY: J. ZAWACKI  
 DATE: MAY 2014



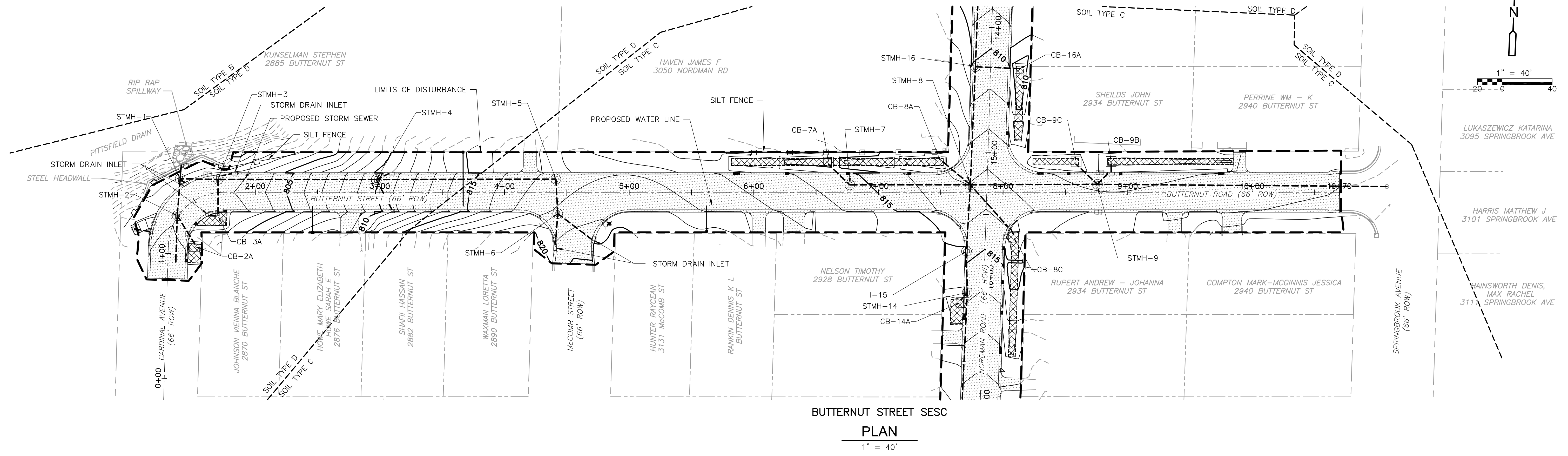
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**SPRINGWATER SUBDIVISION**  
**IMPROVEMENTS PROJECT**

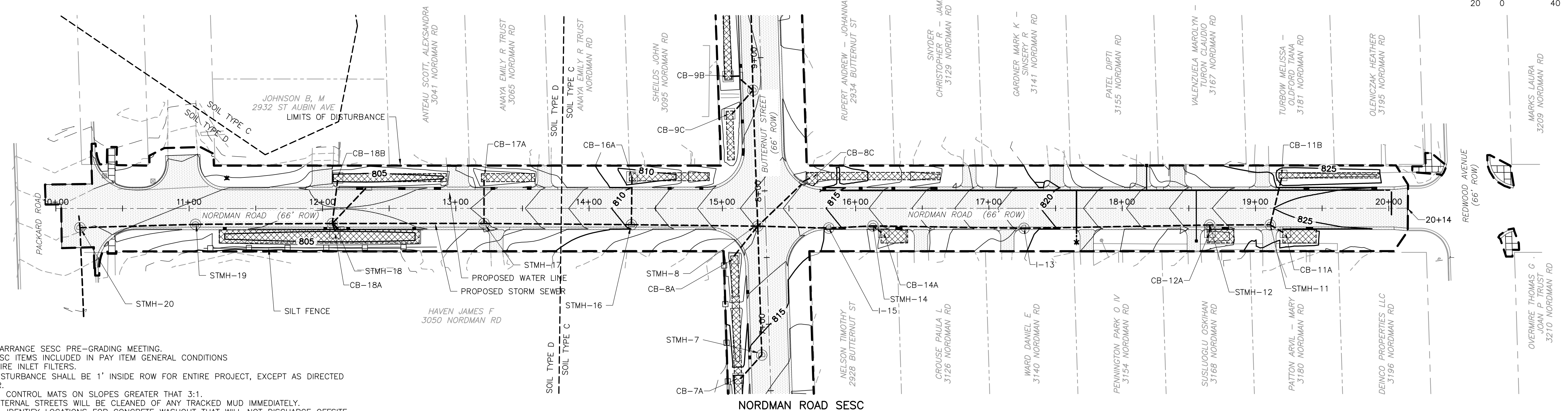
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 PROJECT NO. 1400-100237  
 FILE NAME: C012RMPL.DWG  
 SHEET NO.  
**C-12**



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**BUTTERNUT STREET SESC**  
**PLAN**  
 1" = 40'



**NORDMAN ROAD SESC**  
**PLAN**  
 1" = 40'

- NOTES:**
1. CONTRACTOR TO ARRANGE SESC PRE-GRADING MEETING.
  2. PAYMENT FOR SESC ITEMS INCLUDED IN PAY ITEM GENERAL CONDITIONS
  3. ALL INLETS REQUIRE INLET FILTERS.
  4. THE LIMITS OF DISTURBANCE SHALL BE 1' INSIDE ROW FOR ENTIRE PROJECT, EXCEPT AS DIRECTED BY THE ENGINEER.
  5. PROVIDE EROSION CONTROL MATS ON SLOPES GREATER THAN 3:1.
  6. INTERNAL AND EXTERNAL STREETS WILL BE CLEANED OF ANY TRACKED MUD IMMEDIATELY.
  7. CONTRACTOR WILL IDENTIFY LOCATIONS FOR CONCRETE WASHOUT THAT WILL NOT DISCHARGE OFFSITE OR INTO STORM SEWER SYSTEM.

REV. NO.	DATE	DRWN	CHKD	REMARKS



DESIGNED BY: A. CHAN  
 DRAWN BY: C. MILLER  
 SHEET CHK'D BY: J. ZAWACKI  
 CROSS CHK'D BY: B. SMITH  
 APPROVED BY: J. ZAWACKI  
 DATE: MAY 2014



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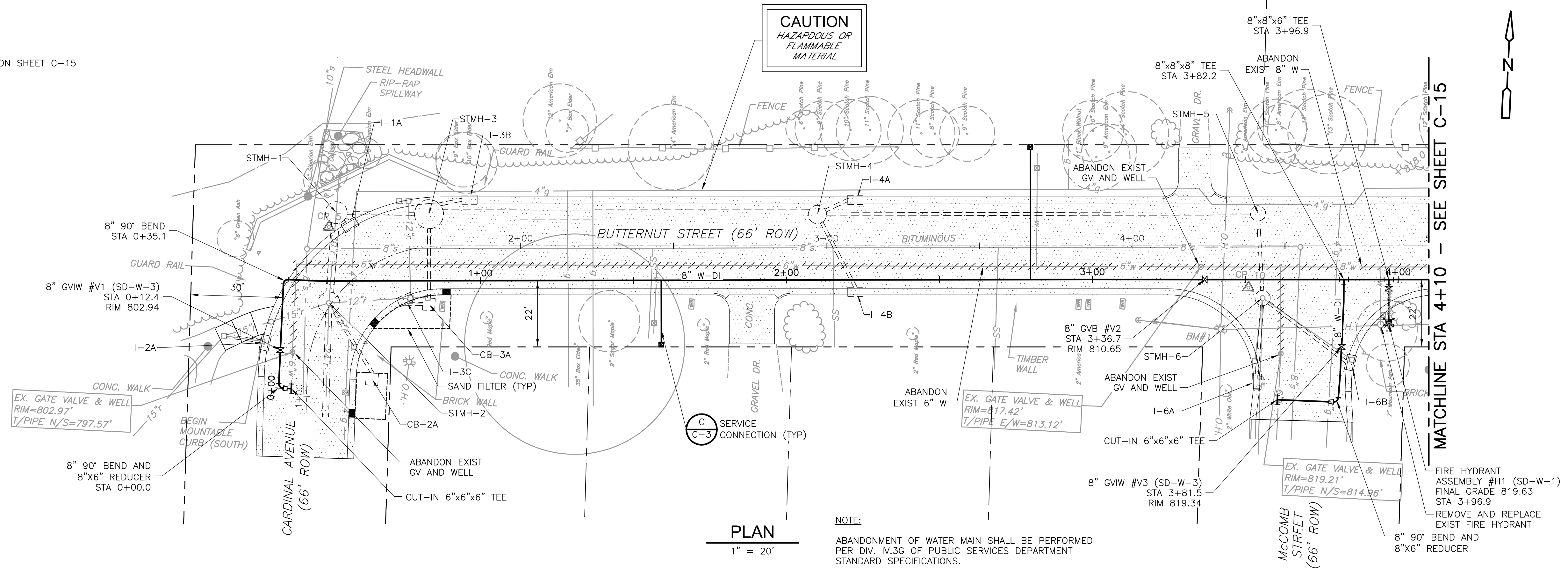
CITY OF ANN ARBOR, MICHIGAN  
**SPRINGWATER SUBDIVISION  
 IMPROVEMENTS PROJECT**

**SOIL EROSION/SEDIMENT CONTROL  
 OVERVIEW**  
**C-13**

PROJECT NO. 1400-100237  
 FILE NAME: CO13UTIL.DWG  
 SHEET NO. C-13

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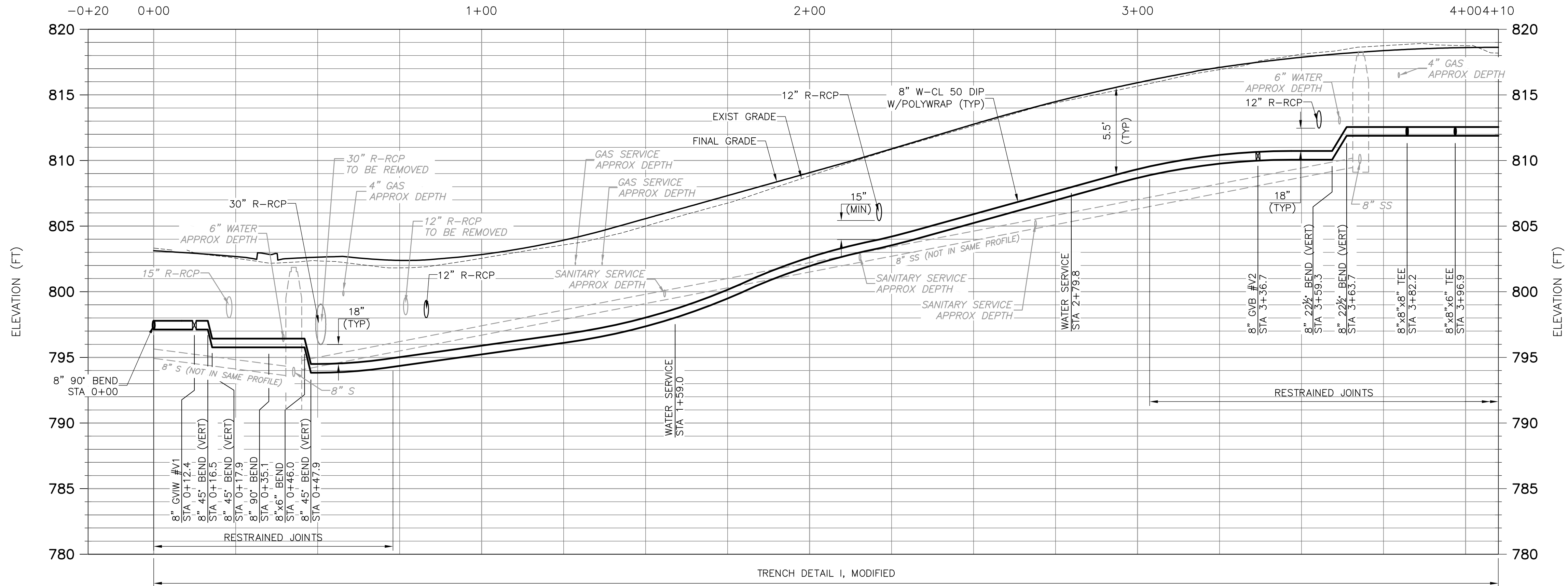
NOTE:  
SEE WATER MAIN STRUCTURE TABLE ON SHEET C-15



PLAN

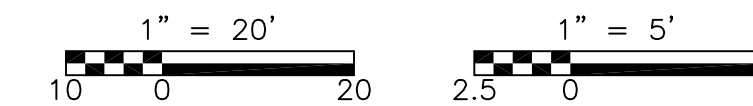
1" = 20'

NOTE:  
ABANDONMENT OF WATER MAIN SHALL BE PERFORMED PER DIV. IV.3G OF PUBLIC SERVICES DEPARTMENT STANDARD SPECIFICATIONS.



PROFILE

HORIZONTAL: 1" = 20'  
VERTICAL: 1" = 5'



REV. NO.	DATE	DRWN	CHKD	REMARKS



DESIGNED BY: A. CHAN  
 DRAWN BY: C. MILLER  
 SHEET CHK'D BY: J. ZAWACKI  
 CROSS CHK'D BY: B. BRIAN  
 APPROVED BY: J. ZAWACKI  
 DATE: MAY 2014



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CITY OF ANN ARBOR, MICHIGAN  
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 IMPROVEMENTS PROJECT

BUTTERNUT STREET  
 WATER MAIN  
 PLAN AND PROFILE

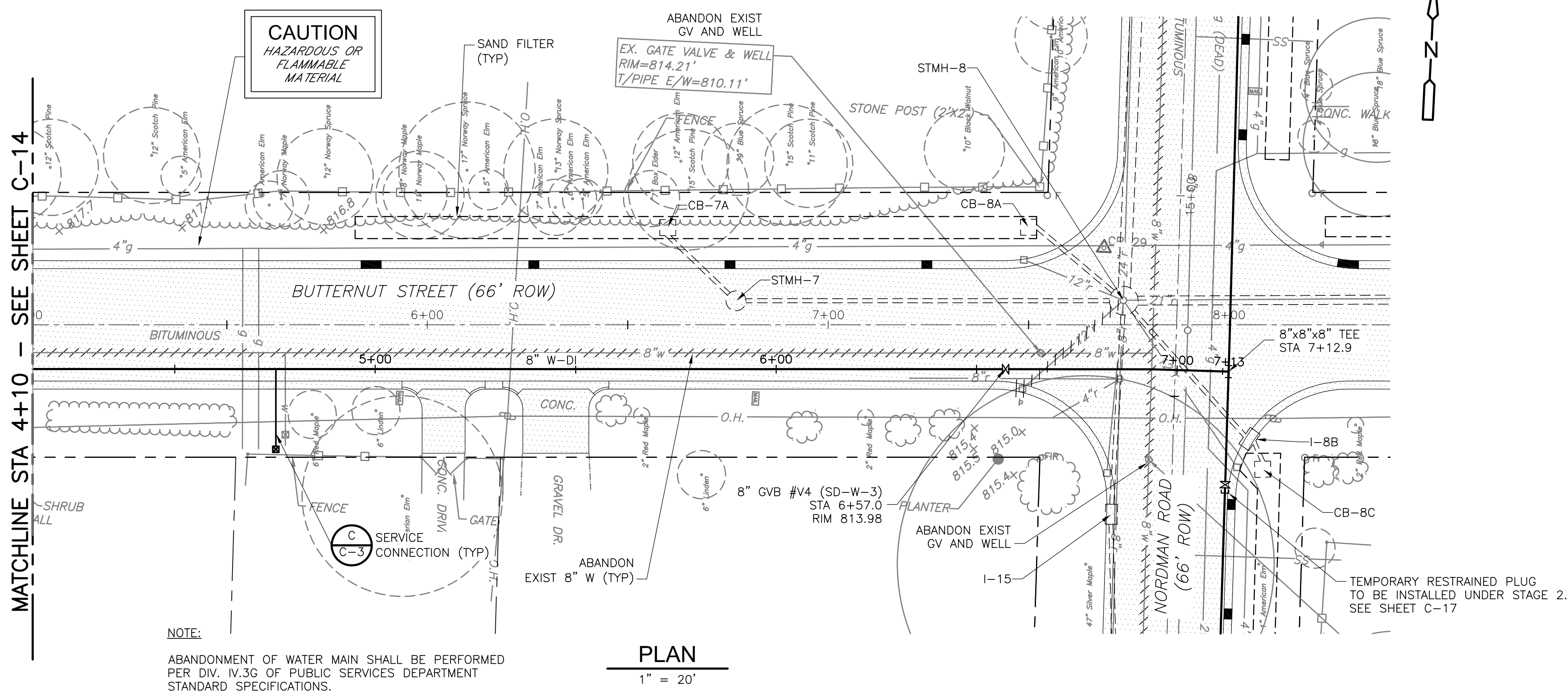
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 SHEET NO.  
**C-14**



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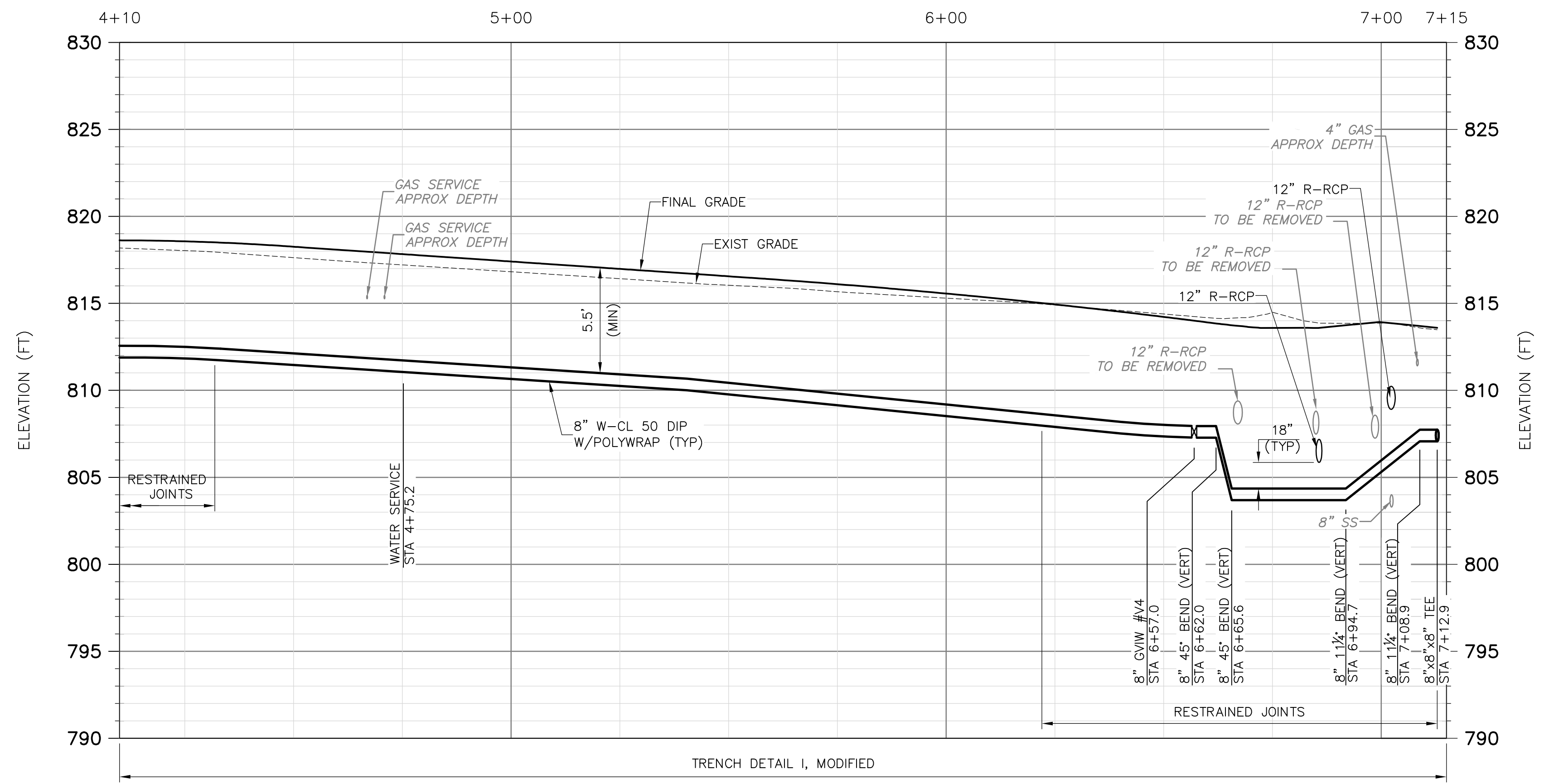
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WATER MAIN STRUCTURE TABLE				
STRUCTURE NUMBER	TYPE	WM STATION	RIM	DEPTH
V1	8" GVIW	0+12.4	802.94	5.8
V2	8" GVIB	3+36.7	810.65	7.5
V3	8" GVIW	3+81.5	820.94	6.6
H1	HYD ASSEMBLY	3+96.9	819.63	6.7
V4	8" GVIB	6+57.0	813.98	6.8
V5	8" GVIB	9+97.6	825.15	6.3
H2	HYD ASSEMBLY	7+66.2	820.76	8.3
V6	8" GVIB	5+72.1	814.49	8.2
H3	HYD ASSEMBLY	1+28.8	807.95	8.9
V7	8" GVIB	0+93.4	807.90	6.0

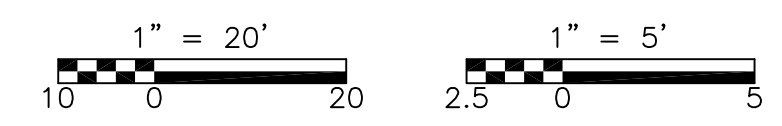


NOTE:  
ABANDONMENT OF WATER MAIN SHALL BE PERFORMED PER DIV. IV.3G OF PUBLIC SERVICES DEPARTMENT STANDARD SPECIFICATIONS.

PLAN  
1" = 20'



PROFILE  
HORIZONTAL: 1" = 20'  
VERTICAL: 1" = 5'



REV. NO.	DATE	DRWN	CHKD	REMARKS



DESIGNED BY: A. CHAN  
DRAWN BY: C. MILLER  
SHEET CHK'D BY: J. ZAWACKI  
CROSS CHK'D BY: B. SMITH  
APPROVED BY: J. ZAWACKI  
DATE: MAY 2014



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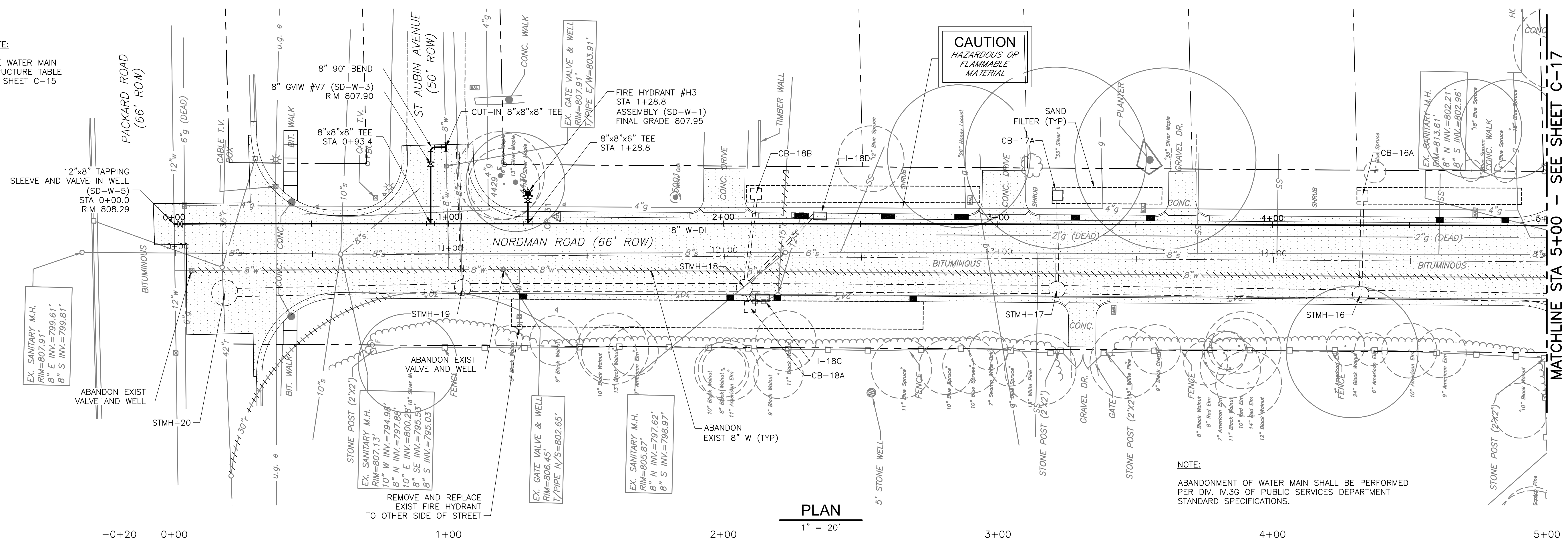
BUTTERNUT STREET  
WATER MAIN  
PLAN AND PROFILE  
C-15

PROJECT NO. 1400-100237  
FILE NAME: CO15WLP.DWG  
SHEET NO. C-15



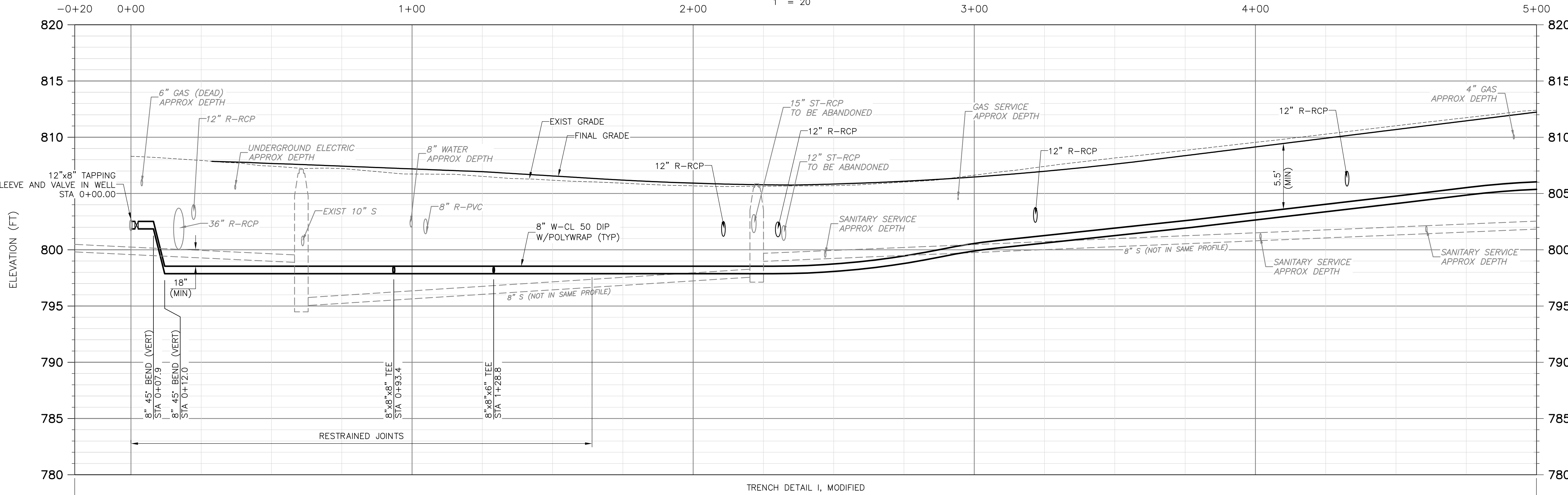
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NOTE:  
SEE WATER MAIN STRUCTURE TABLE ON SHEET C-15

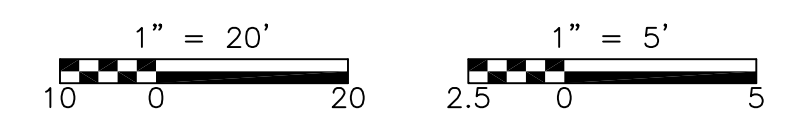


NOTE:  
ABANDONMENT OF WATER MAIN SHALL BE PERFORMED PER DIV. IV.3G OF PUBLIC SERVICES DEPARTMENT STANDARD SPECIFICATIONS.

MATCHLINE STA 5+00 - SEE SHEET C-17



TRENCH DETAIL I, MODIFIED  
**PROFILE**  
HORIZONTAL: 1" = 20'  
VERTICAL: 1" = 5'



REV. NO.	DATE	DRWN	CHKD	REMARKS



DESIGNED BY: A. CHAN  
DRAWN BY: C. MILLER  
SHEET CHK'D BY: J. ZAWACKI  
CROSS CHK'D BY: B. SMITH  
APPROVED BY: J. ZAWACKI  
DATE: MAY 2014



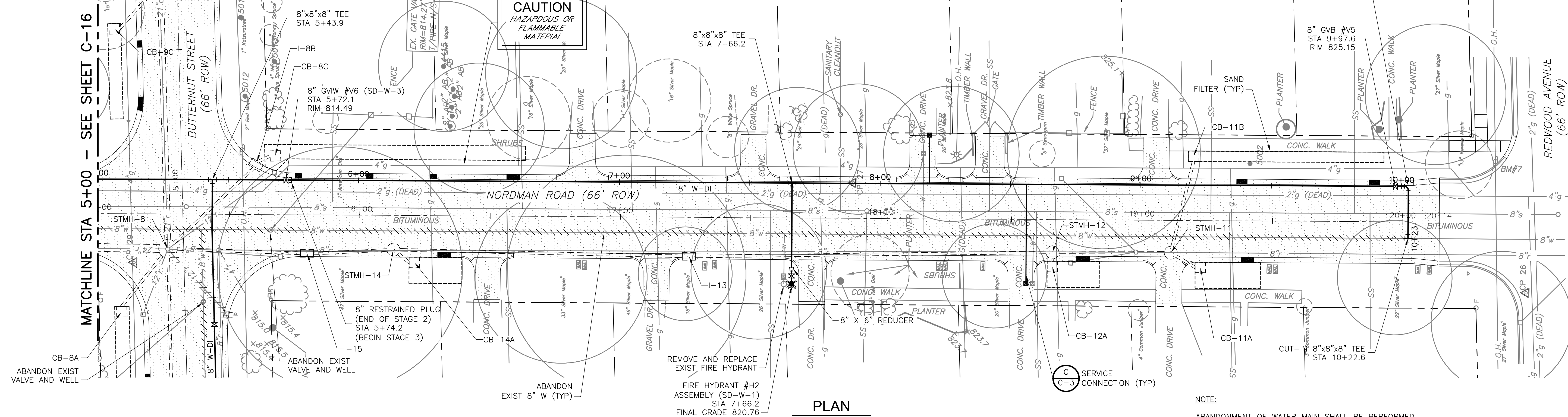
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**SPRINGWATER SUBDIVISION  
IMPROVEMENTS PROJECT**

**NORDMAN STREET  
WATER MAIN  
PLAN AND PROFILE**

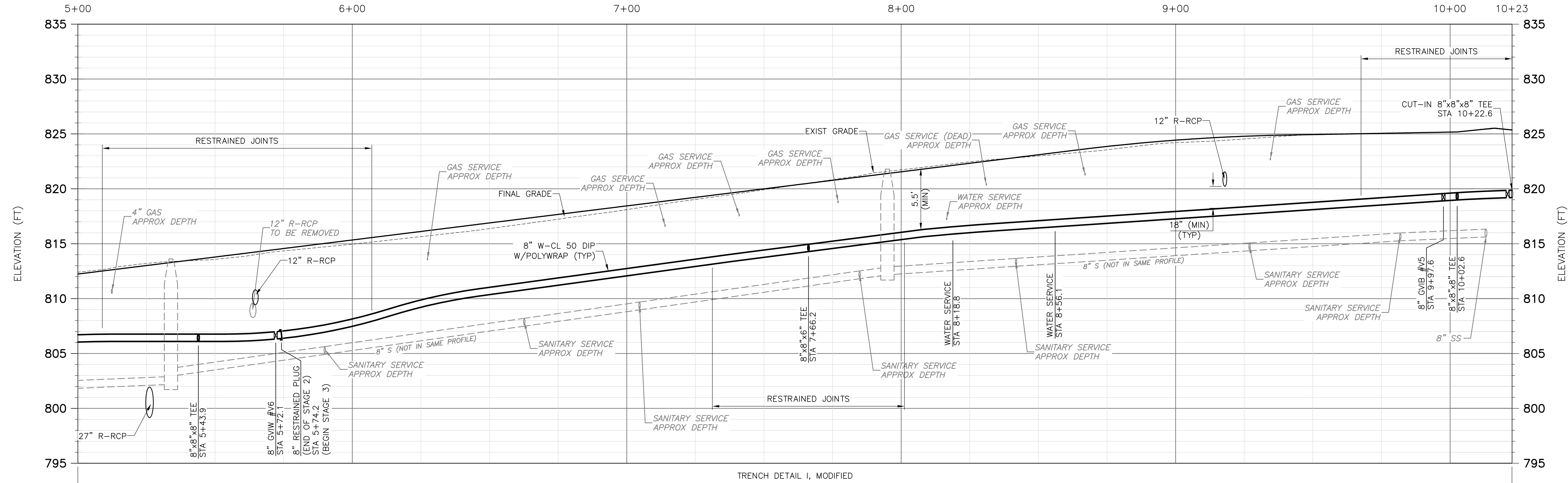
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FILE NAME: C016WLP.DWG  
SHEET NO. **C-16**

NOTE:  
SEE WATER MAIN  
STRUCTURE TABLE  
ON SHEET C-15

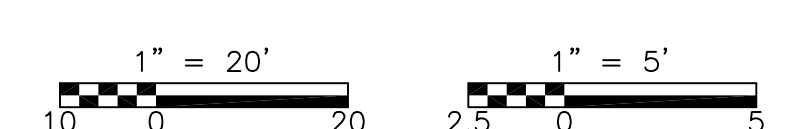


**PLAN**  
1" = 20'

NOTE:  
ABANDONMENT OF WATER MAIN SHALL BE PERFORMED  
PER DIV. IV.36 OF PUBLIC SERVICES DEPARTMENT  
STANDARD SPECIFICATIONS.



**PROFILE**  
HORIZONTAL: 1" = 20'  
VERTICAL: 1" = 5'



REV. NO.	DATE	DRWN	CHKD	REMARKS



DESIGNED BY: A. CHAN  
DRAWN BY: C. MILLER  
SHEET CHK'D BY: J. ZAWACKI  
CROSS CHK'D BY: B. SMITH  
APPROVED BY: J. ZAWACKI  
DATE: MAY 2014



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IMPROVEMENTS PROJECT**

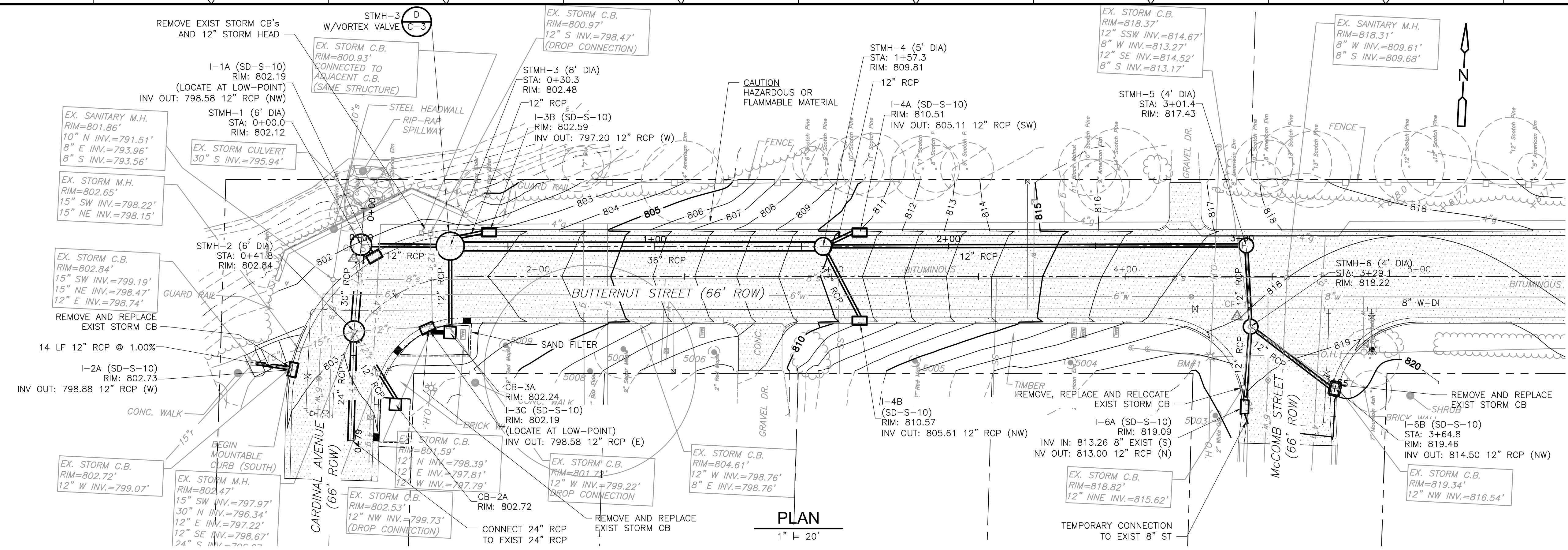
**NORDMAN STREET  
WATER MAIN  
PLAN AND PROFILE**

PROJECT NO. 1400-100237  
FILE NAME: C017WLPP.DWG  
SHEET NO.  
**C-17**

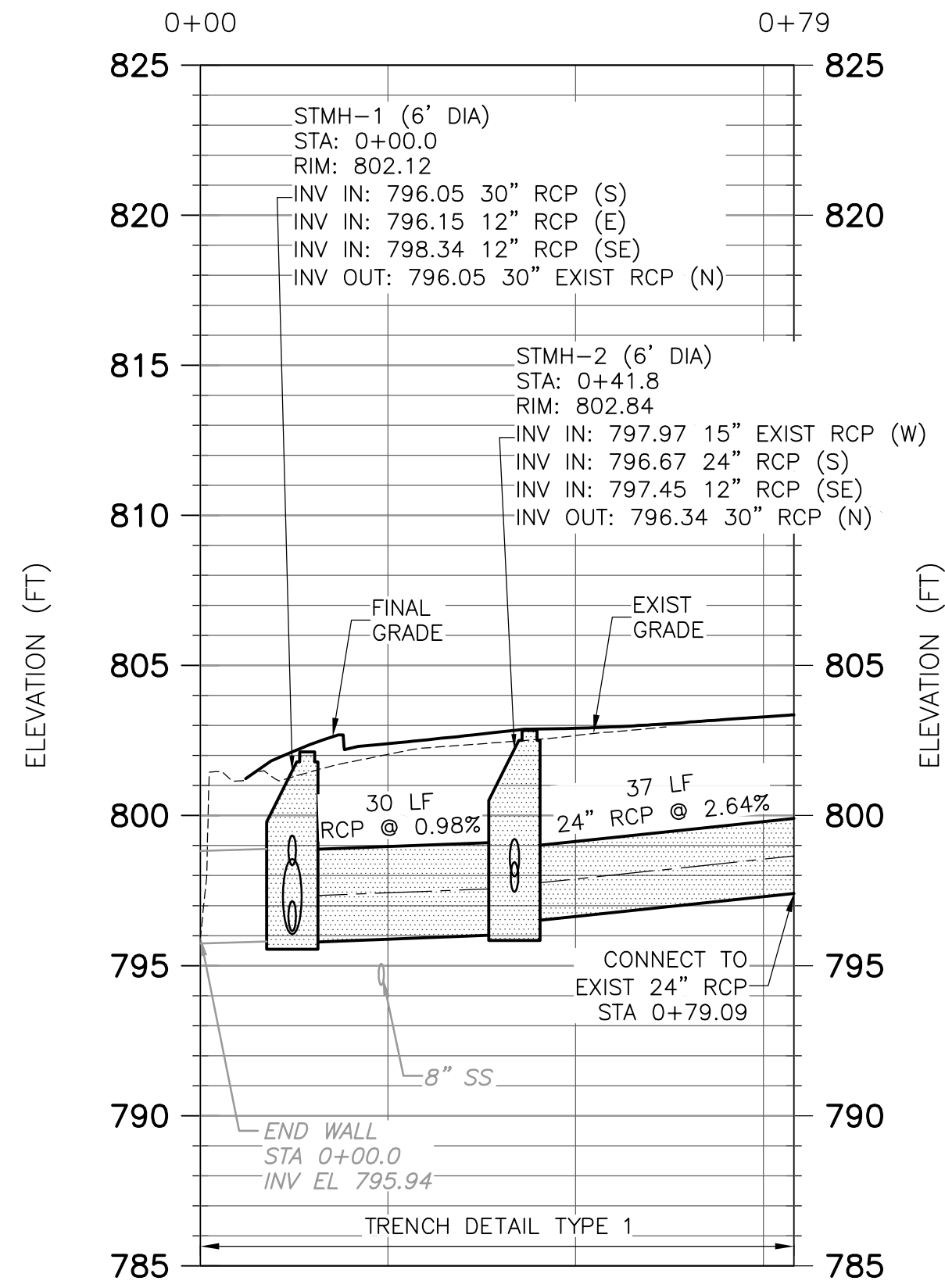
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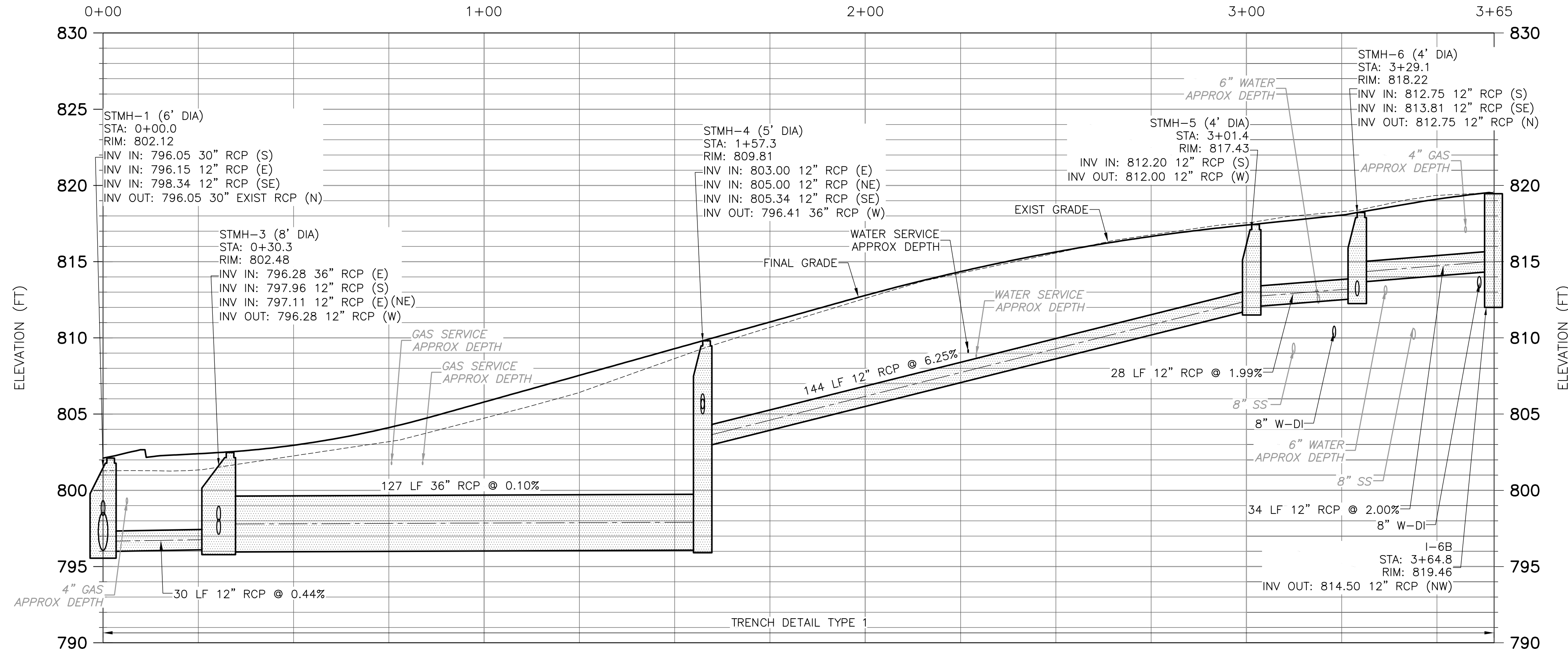
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NOTE:  
 STORM DRAINAGE SHALL BE MAINTAINED BY CONTRACTOR AT ALL TIMES. COSTS ASSOCIATED WITH THIS WORK SHALL BE INCLUDED IN UNIT PRICES FOR THE APPROPRIATE STORM SEWER ITEMS.

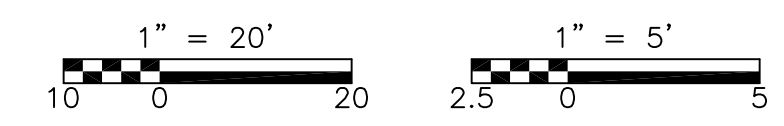


EXISTING END WALL TO STMH-2  
**PROFILE**  
 HORIZONTAL: 1" = 20'  
 VERTICAL: 1" = 5'



STMH-1 TO I-6B  
**PROFILE**  
 HORIZONTAL: 1" = 20'  
 VERTICAL: 1" = 5'

NOTE:  
 SEE STORM STRUCTURE TABLE ON SHEET C-24.



REV. NO.	DATE	DRWN	CHKD	REMARKS



DESIGNED BY: A. CHAN  
 DRAWN BY: C. MILLER  
 SHEET CHK'D BY: J. ZAWACKI  
 CROSS CHK'D BY: B. SMITH  
 APPROVED BY: J. ZAWACKI  
 DATE: MAY 2014



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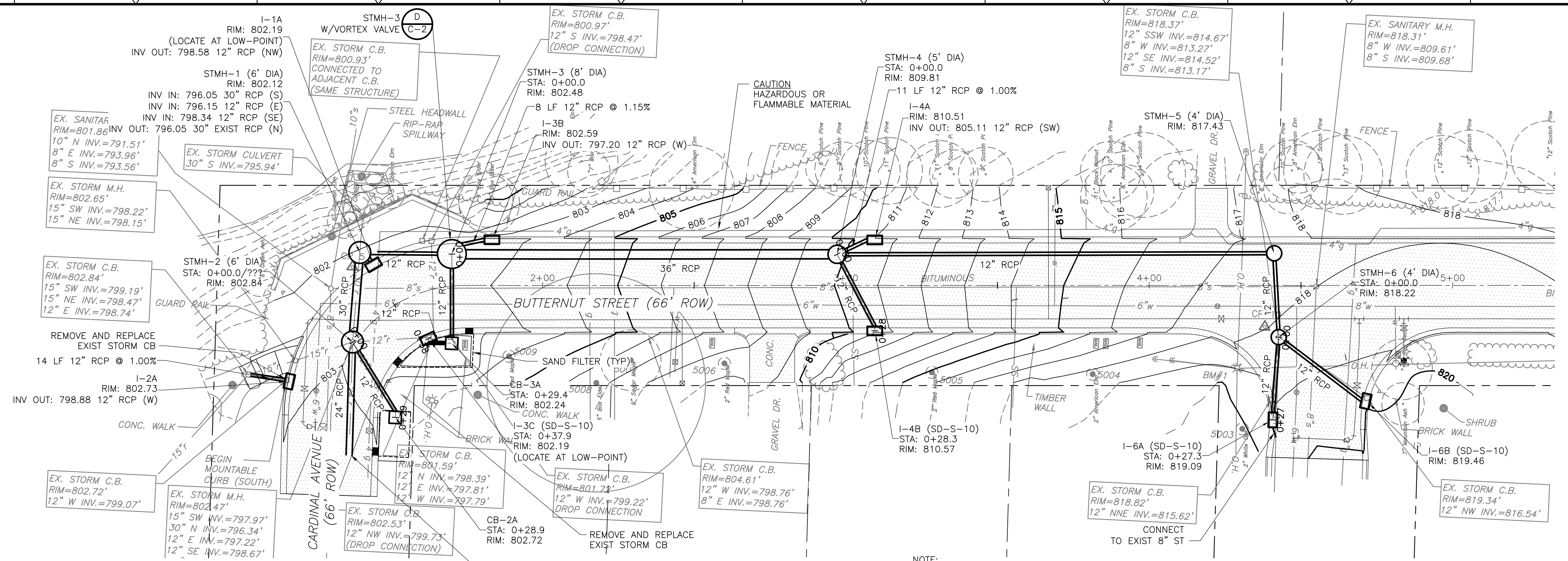
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BUTTERNUT STREET  
 STORM SEWER  
 PLAN AND PROFILES

PROJECT NO. 1400-100237  
 FILE NAME: C018STPP.DWG  
 SHEET NO. C-18

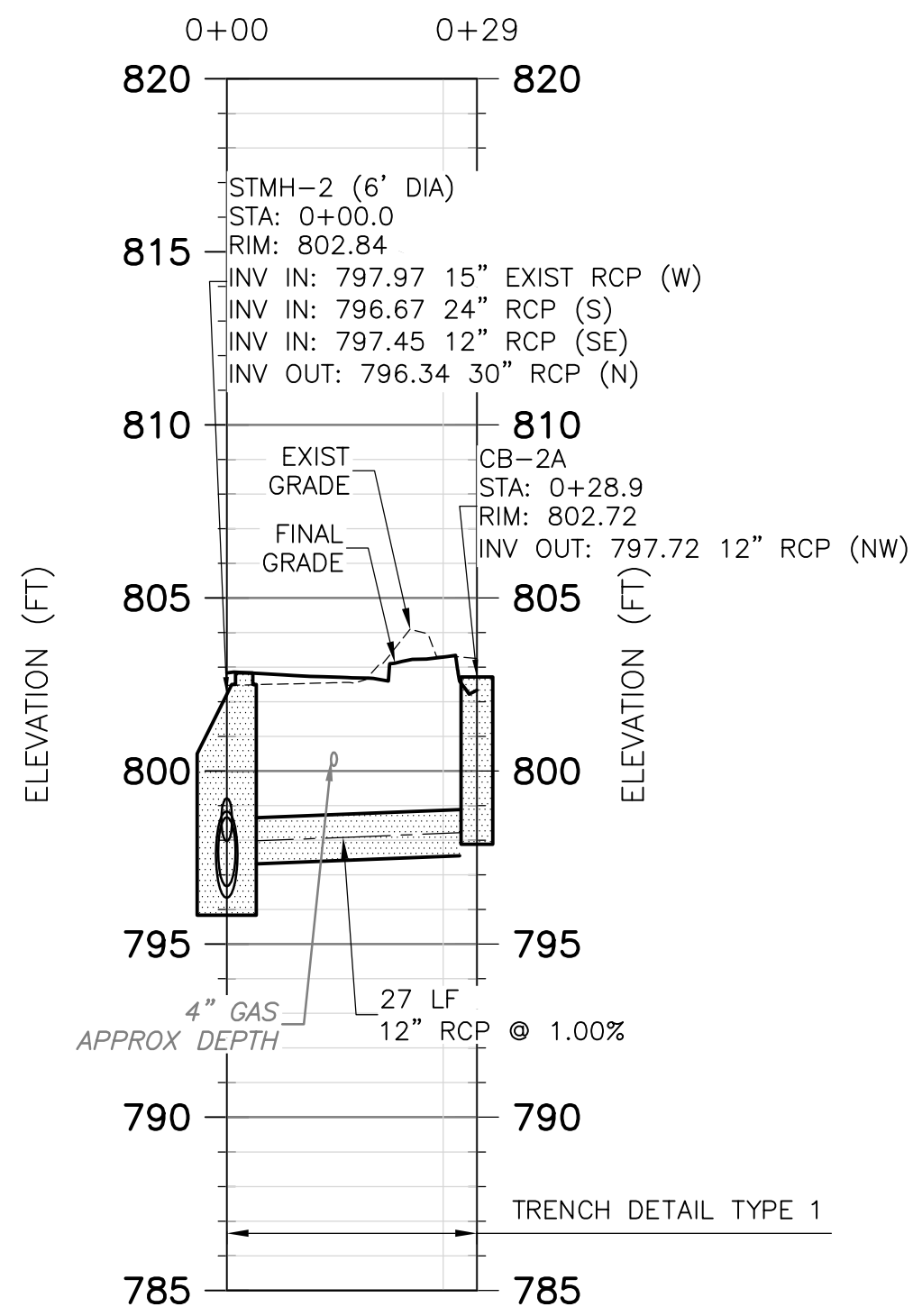
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NOTE:  
SEE STORM STRUCTURE TABLE ON SHEET C-5.

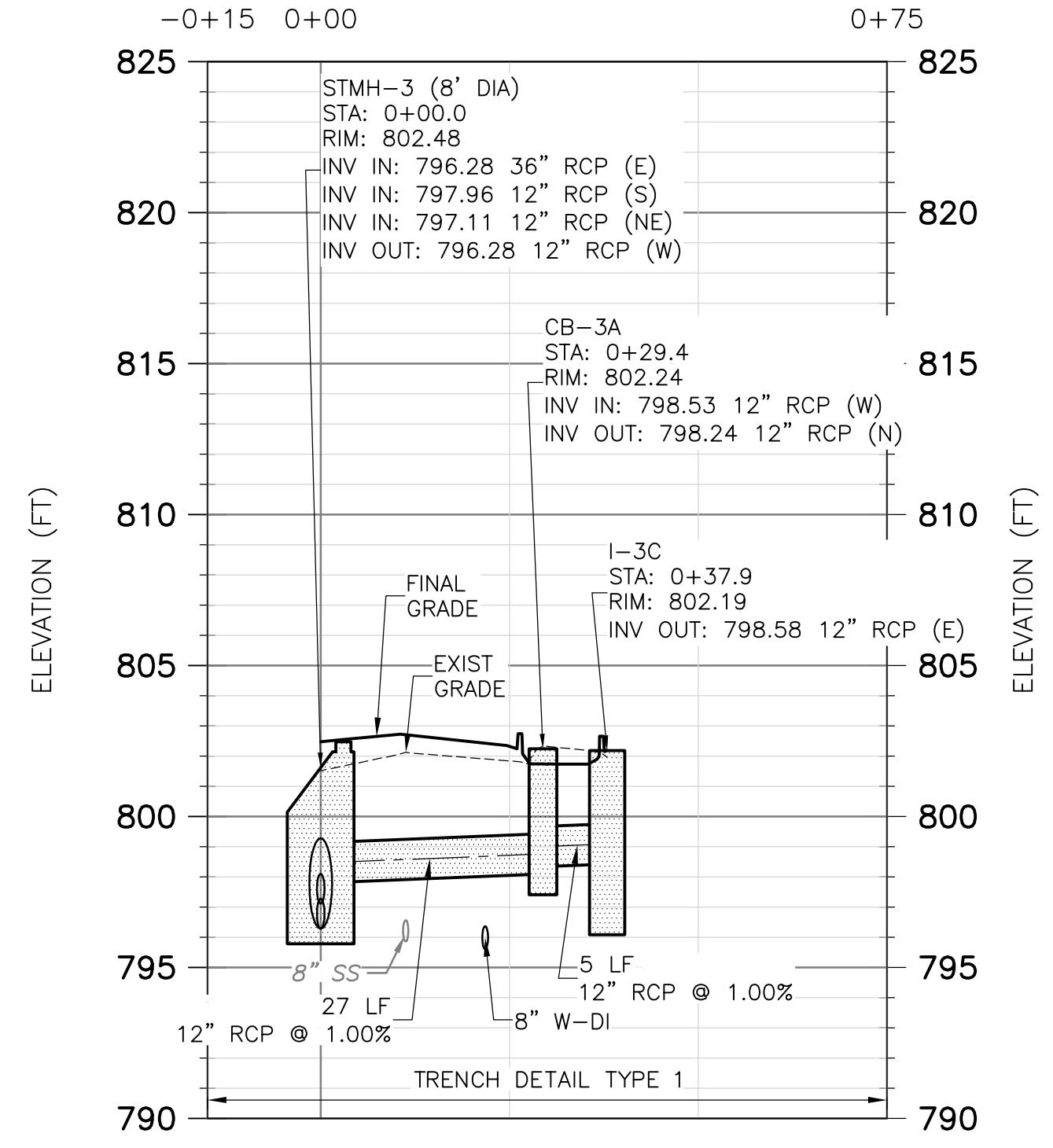


**PLAN**  
1" = 20'

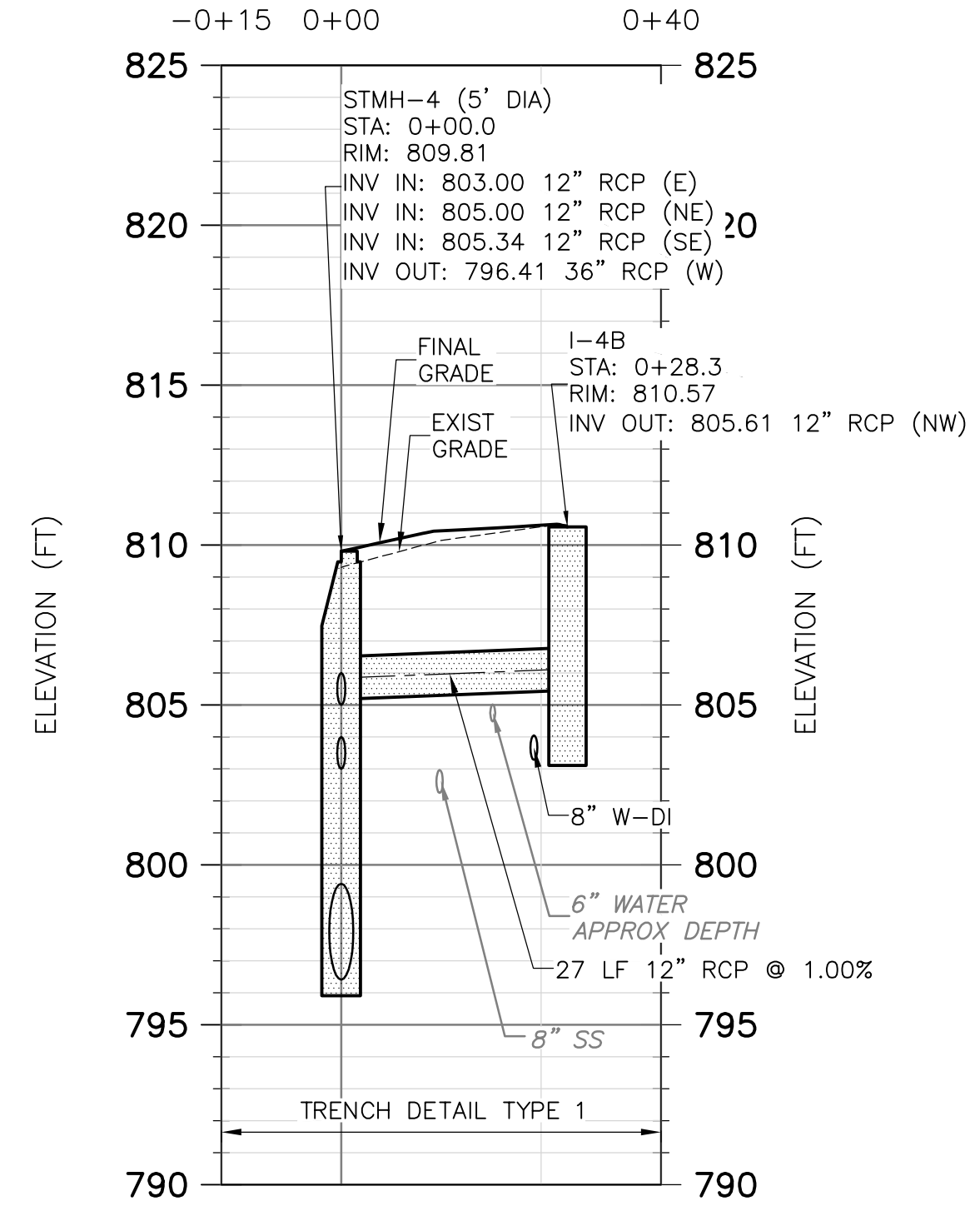
NOTE:  
STORM DRAINAGE SHALL BE MAINTAINED BY CONTRACTOR AT ALL TIMES. COSTS ASSOCIATED WITH THIS WORK SHALL BE INCLUDED IN UNIT PRICES FOR THE APPROPRIATE STORM SEWER ITEMS.



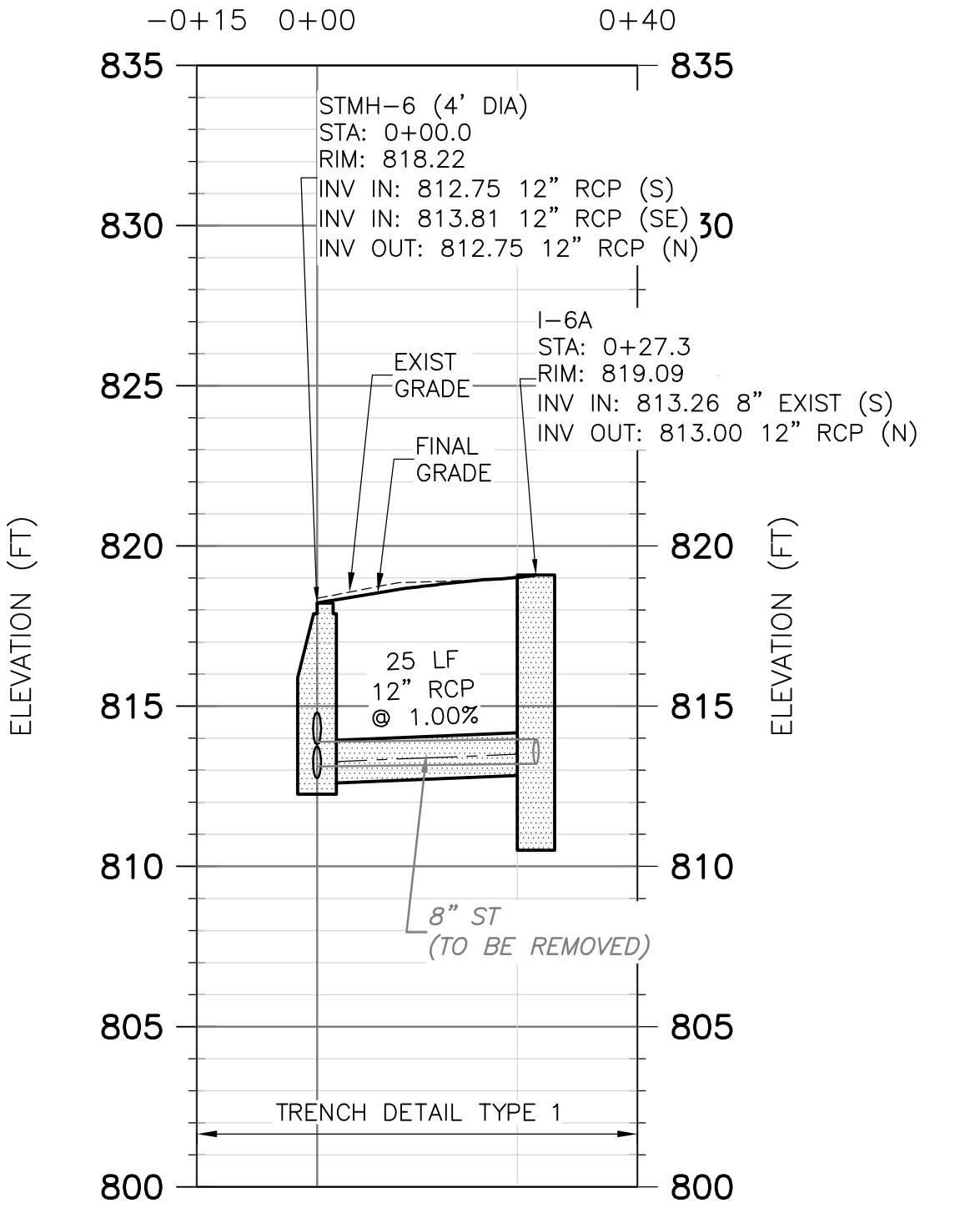
**STMH-2 TO CB-2A PROFILE**  
HORIZONTAL: 1" = 20'  
VERTICAL: 1" = 5'



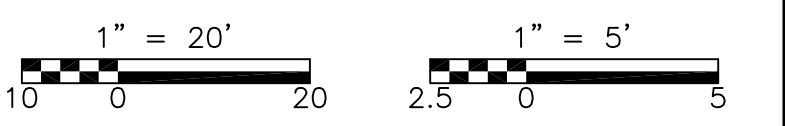
**STMH-3 TO CB-3A PROFILE**  
HORIZONTAL: 1" = 20'  
VERTICAL: 1" = 5'



**STMH-4 TO CB-4B PROFILE**  
HORIZONTAL: 1" = 20'  
VERTICAL: 1" = 5'



**STMH-6 TO CB-6A PROFILE**  
HORIZONTAL: 1" = 20'  
VERTICAL: 1" = 5'



REV. NO.	DATE	DRWN	CHKD	REMARKS



DESIGNED BY: A. CHAN  
 DRAWN BY: C. MILLER  
 SHEET CHK'D BY: J. ZAWACKI  
 CROSS CHK'D BY: B. SMITH  
 APPROVED BY: J. ZAWACKI  
 DATE: MAY 2014



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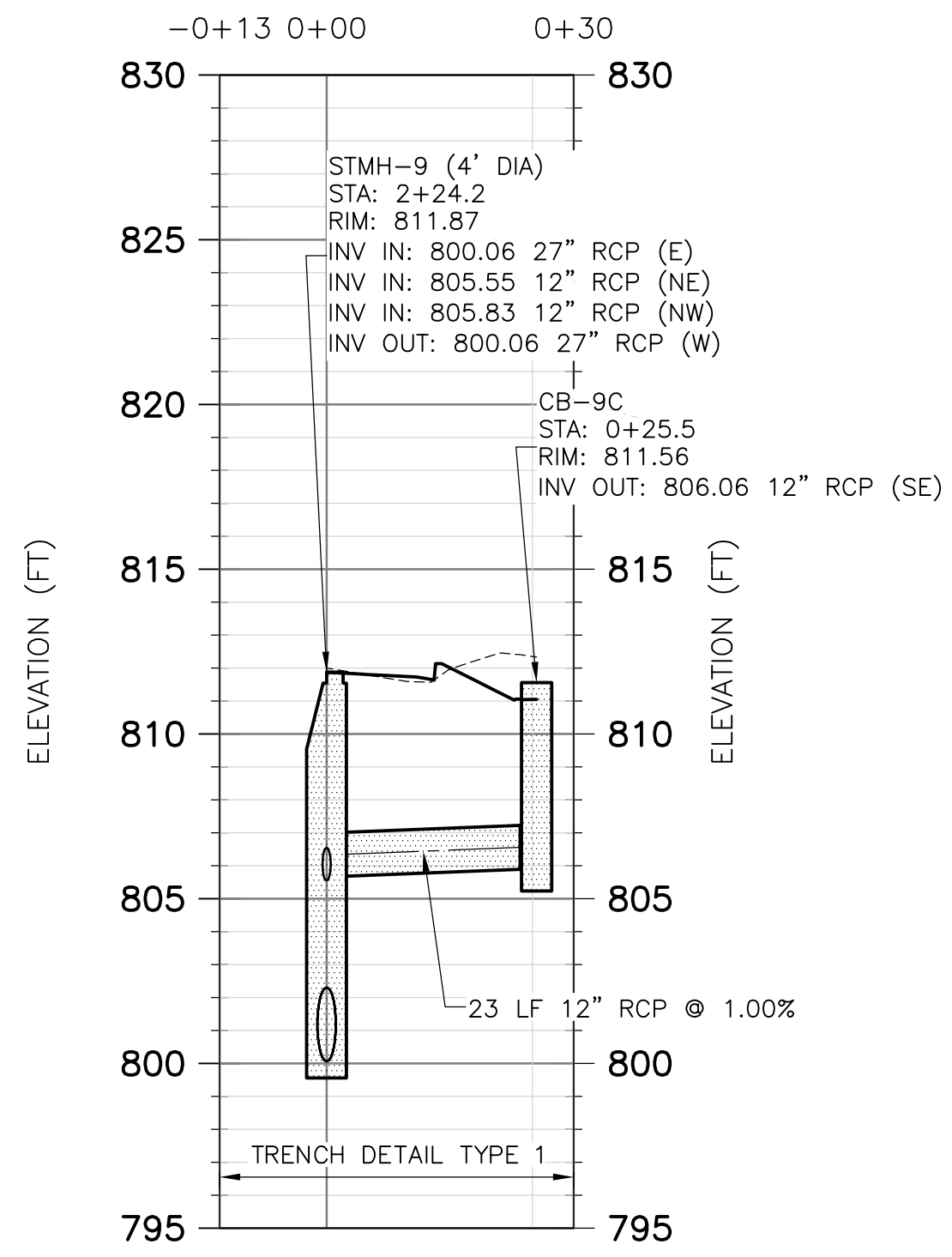
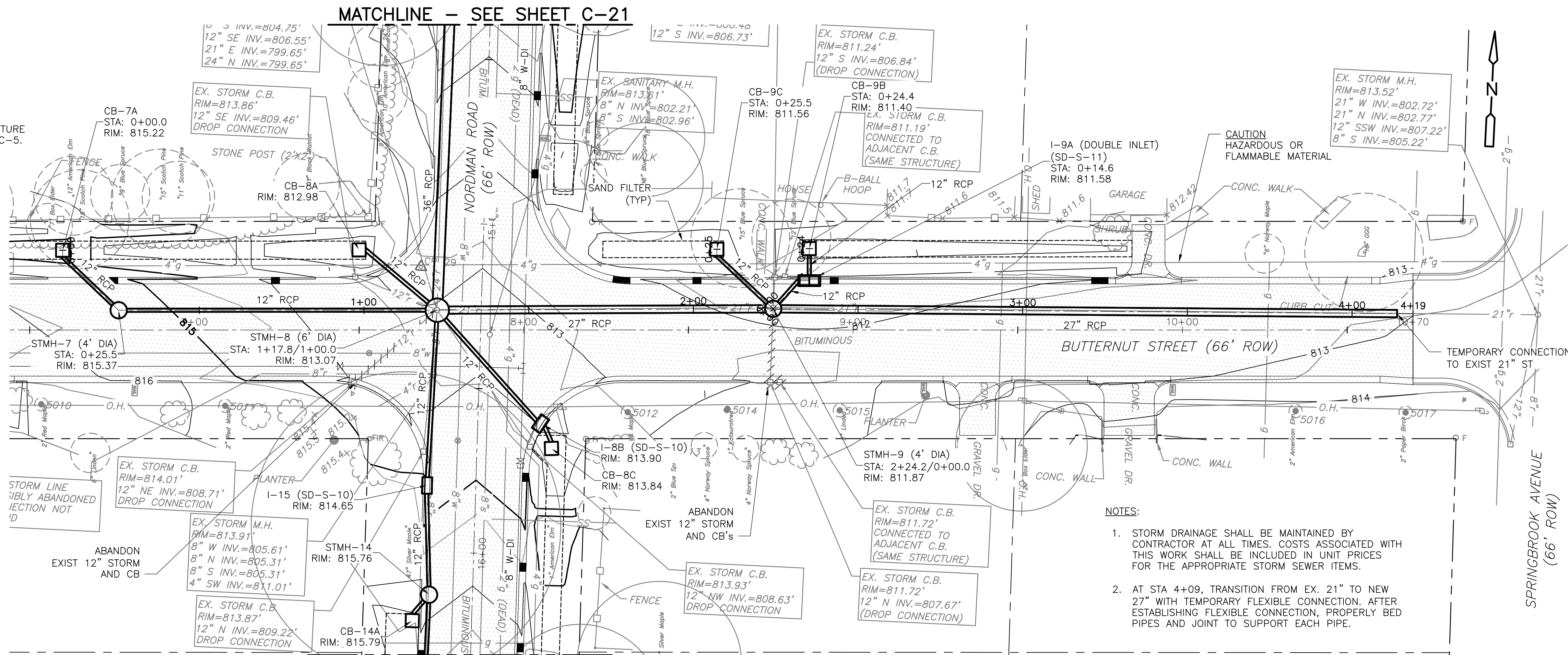
CITY OF ANN ARBOR, MICHIGAN  
 SPRINGWATER SUBDIVISION  
 IMPROVEMENTS PROJECT

BUTTERNUT STREET  
 CATCH BASIN AND INLET  
 PLAN AND PROFILES

PROJECT NO. 1400-100237  
 FILE NAME: C019STPP.DWG  
 SHEET NO. C-19



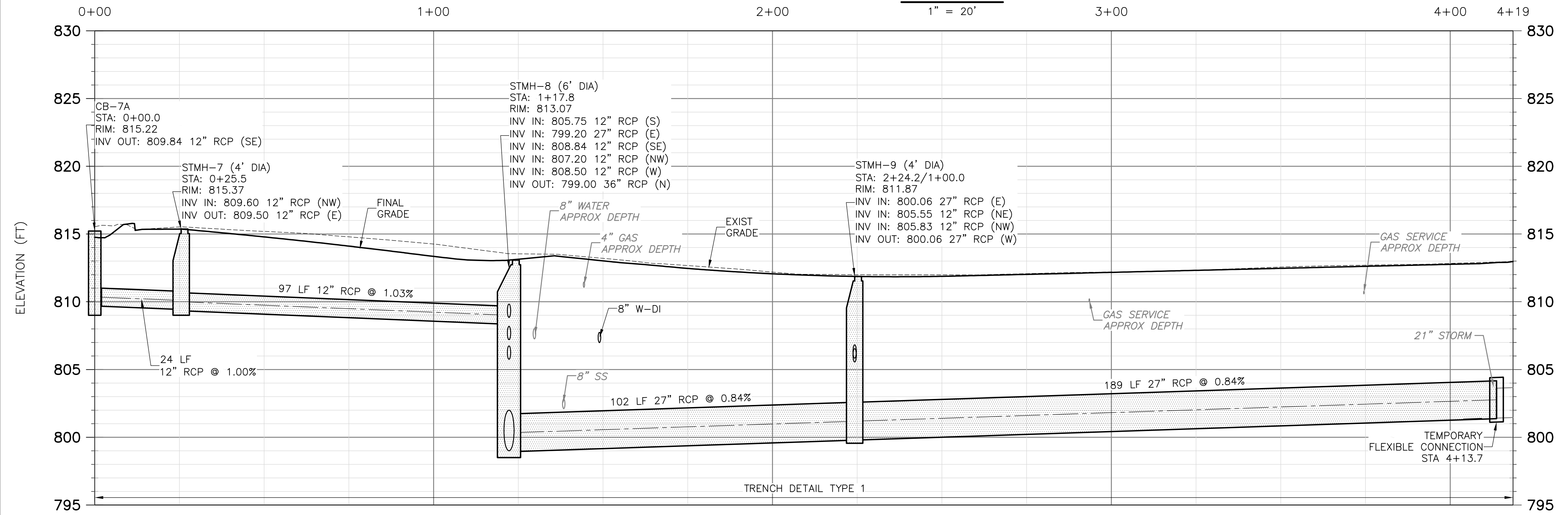
NOTE:  
SEE STORM STRUCTURE TABLE ON SHEET C-5.



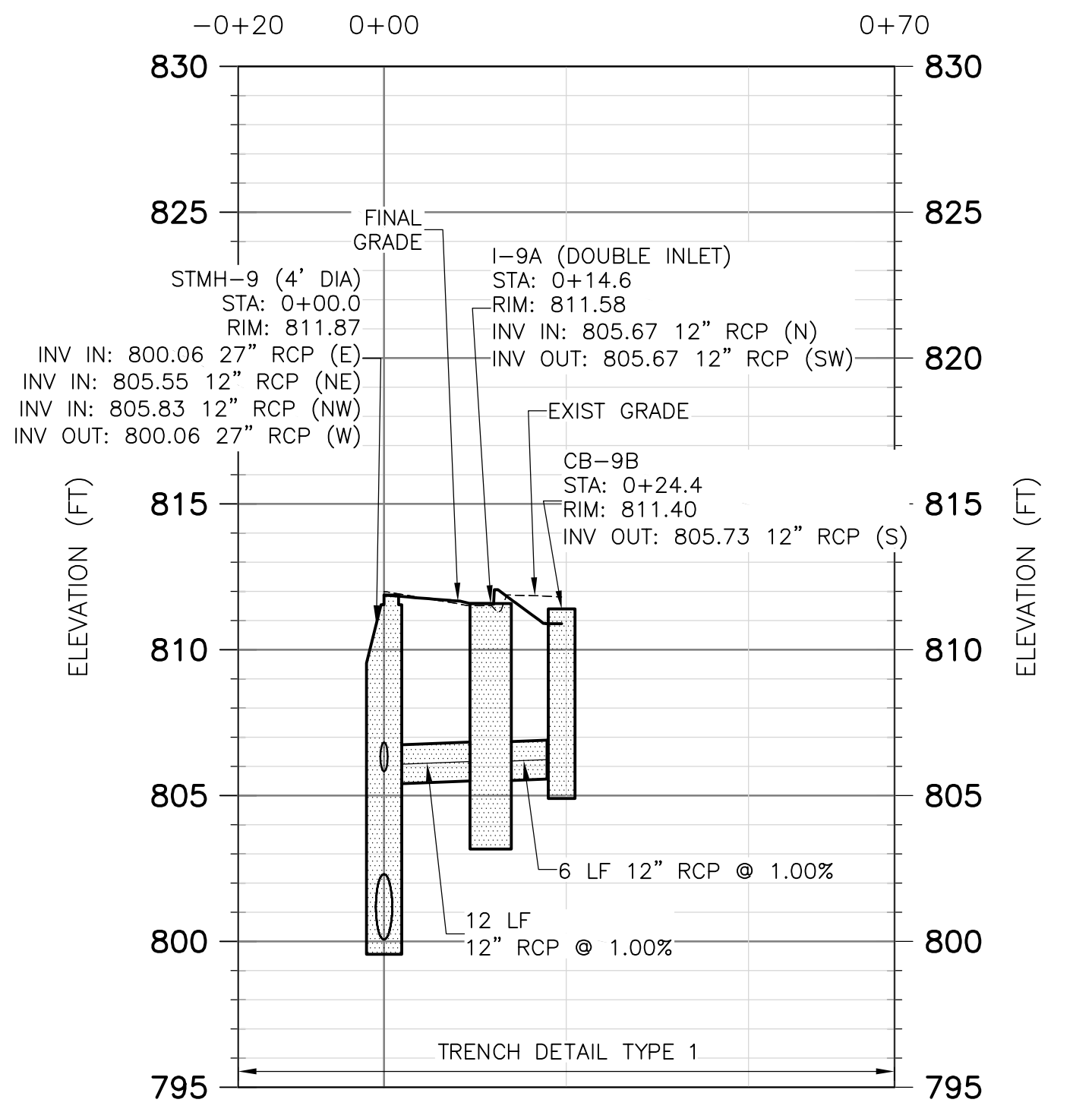
STMH-9 TO CB-9C  
PROFILE  
HORIZONTAL: 1" = 20'  
VERTICAL: 1" = 5'

- NOTES:
1. STORM DRAINAGE SHALL BE MAINTAINED BY CONTRACTOR AT ALL TIMES. COSTS ASSOCIATED WITH THIS WORK SHALL BE INCLUDED IN UNIT PRICES FOR THE APPROPRIATE STORM SEWER ITEMS.
  2. AT STA 4+09, TRANSITION FROM EX. 21" TO NEW 27" WITH TEMPORARY FLEXIBLE CONNECTION. AFTER ESTABLISHING FLEXIBLE CONNECTION, PROPERLY BED PIPES AND JOINT TO SUPPORT EACH PIPE.

MATCHLINE - SEE SHEET C-22  
PLAN  
1" = 20'



CB-7A TO EXISTING 21" ST  
PROFILE  
HORIZONTAL: 1" = 20'  
VERTICAL: 1" = 5'



STMH-9 TO CB-9B  
PROFILE  
HORIZONTAL: 1" = 20'  
VERTICAL: 1" = 5'

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REV. NO.	DATE	DRWN	CHKD	REMARKS



DESIGNED BY: A. CHAN  
 DRAWN BY: C. MILLER  
 SHEET CHK'D BY: J. ZAWACKI  
 CROSS CHK'D BY: B. SMITH  
 APPROVED BY: J. ZAWACKI  
 DATE: MAY 2014



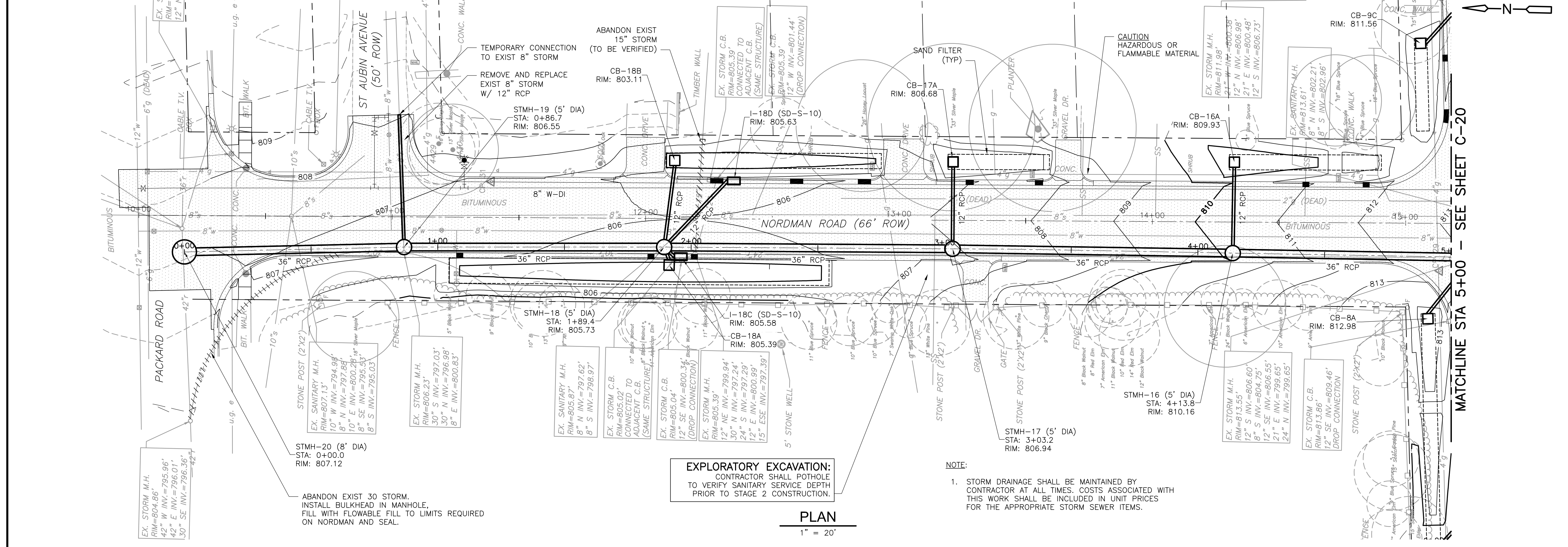
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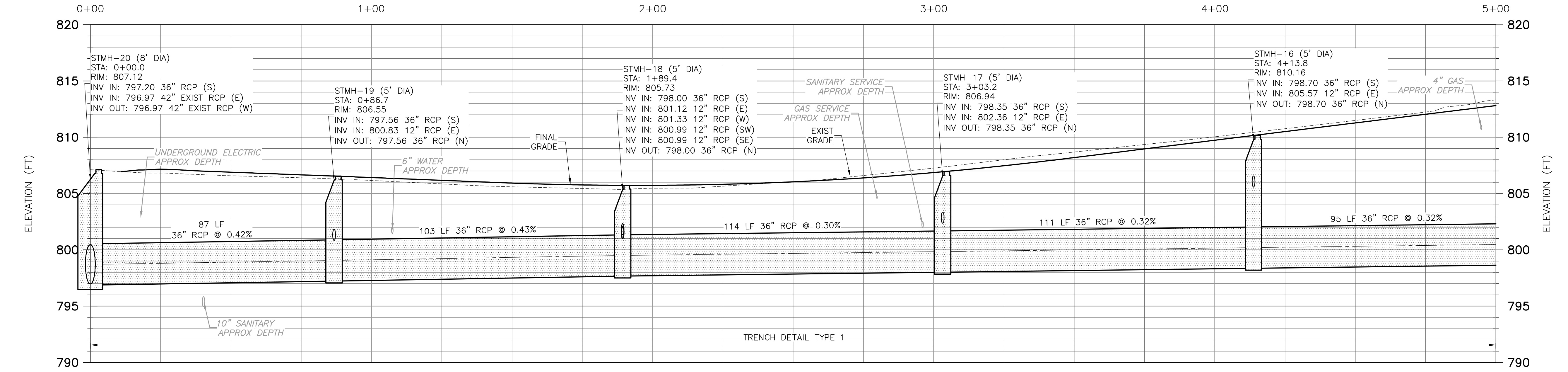
BUTTERNUT STREET  
 STORM SEWER AND CATCH BASIN  
 PLAN AND PROFILES

PROJECT NO. 1400-100237  
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 SHEET NO. C-20

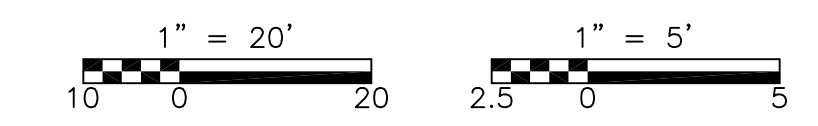
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**PLAN**  
 1" = 20'



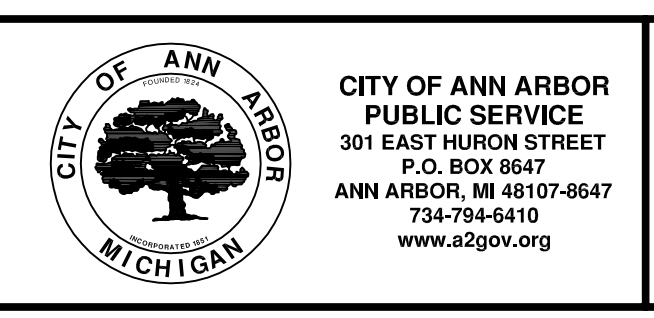
**STMH-20 TO STMH-16**  
**PROFILE**  
 HORIZONTAL: 1" = 20'  
 VERTICAL: 1" = 5'



REV. NO.	DATE	DRWN	CHKD	REMARKS



DESIGNED BY: A. CHAN  
 DRAWN BY: C. MILLER  
 SHEET CHK'D BY: J. ZAWACKI  
 CROSS CHK'D BY: B. SMITH  
 APPROVED BY: J. ZAWACKI  
 DATE: MAY 2014



CITY OF ANN ARBOR, MICHIGAN  
**SPRINGWATER SUBDIVISION**  
**IMPROVEMENTS PROJECT**

**NORDMAN ROAD**  
**STORM SEWER**  
**PLAN AND PROFILE**  
**C-21**

PROJECT NO. 1400-100237  
 FILE NAME: CO21STPP.DWG  
 SHEET NO. C-21

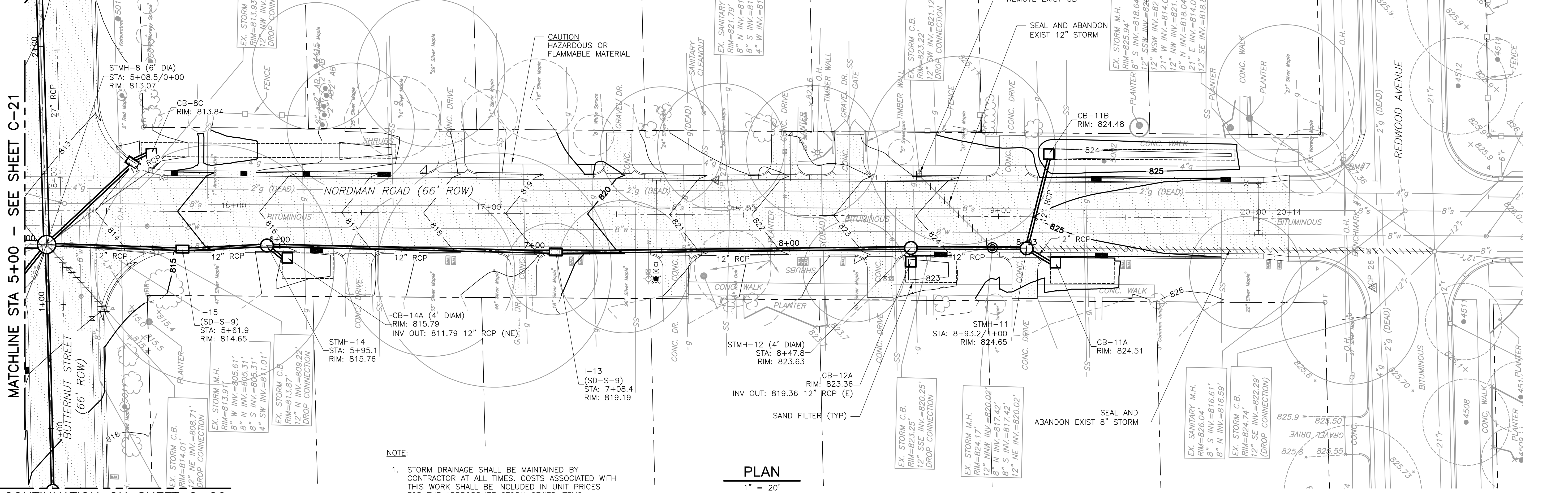


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CONTINUATION ON SHEET C-20

MATCHLINE STA 5+00 - SEE SHEET C-21

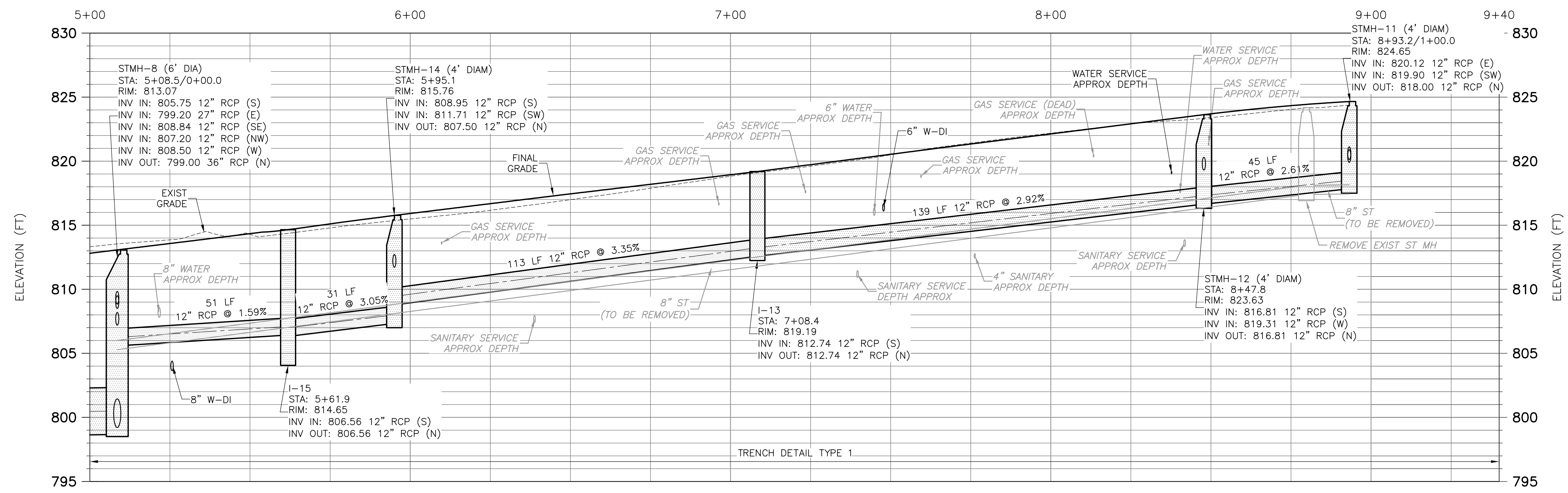
CONTINUATION ON SHEET C-20



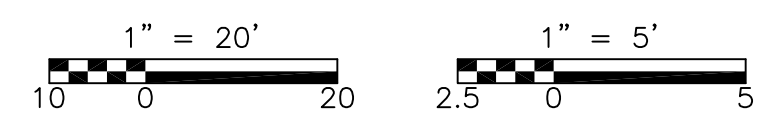
**NOTE:**  
 1. STORM DRAINAGE SHALL BE MAINTAINED BY CONTRACTOR AT ALL TIMES. COSTS ASSOCIATED WITH THIS WORK SHALL BE INCLUDED IN UNIT PRICES FOR THE APPROPRIATE STORM SEWER ITEMS.

**PLAN**  
 1" = 20'

**NOTE:**  
 SEE STORM STRUCTURE TABLE ON SHEET C-5.



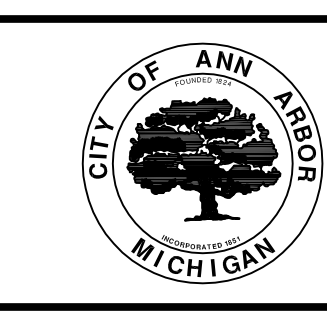
**STMH-8 TO STMH-11**  
**PROFILE**  
 HORIZONTAL: 1" = 20'  
 VERTICAL: 1" = 5'



REV. NO.	DATE	DRWN	CHKD	REMARKS



DESIGNED BY: A. CHAN  
 DRAWN BY: C. MILLER  
 SHEET CHK'D BY: J. ZAWACKI  
 CROSS CHK'D BY: B. SMITH  
 APPROVED BY: J. ZAWACKI  
 DATE: MAY 2014



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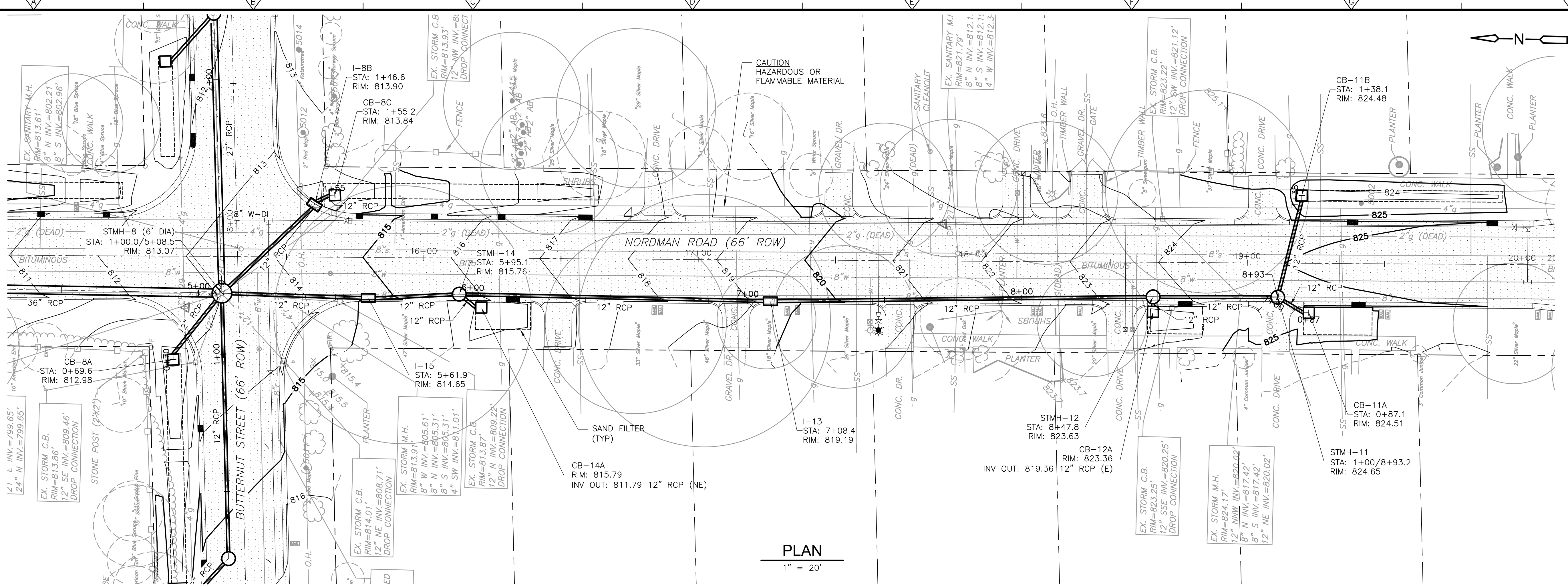
**NORDMAN ROAD  
 STORM SEWER  
 PLAN AND PROFILE**

PROJECT NO. 1400-100237  
 FILE NAME: CO22STPP.DWG  
 SHEET NO. **C-22**

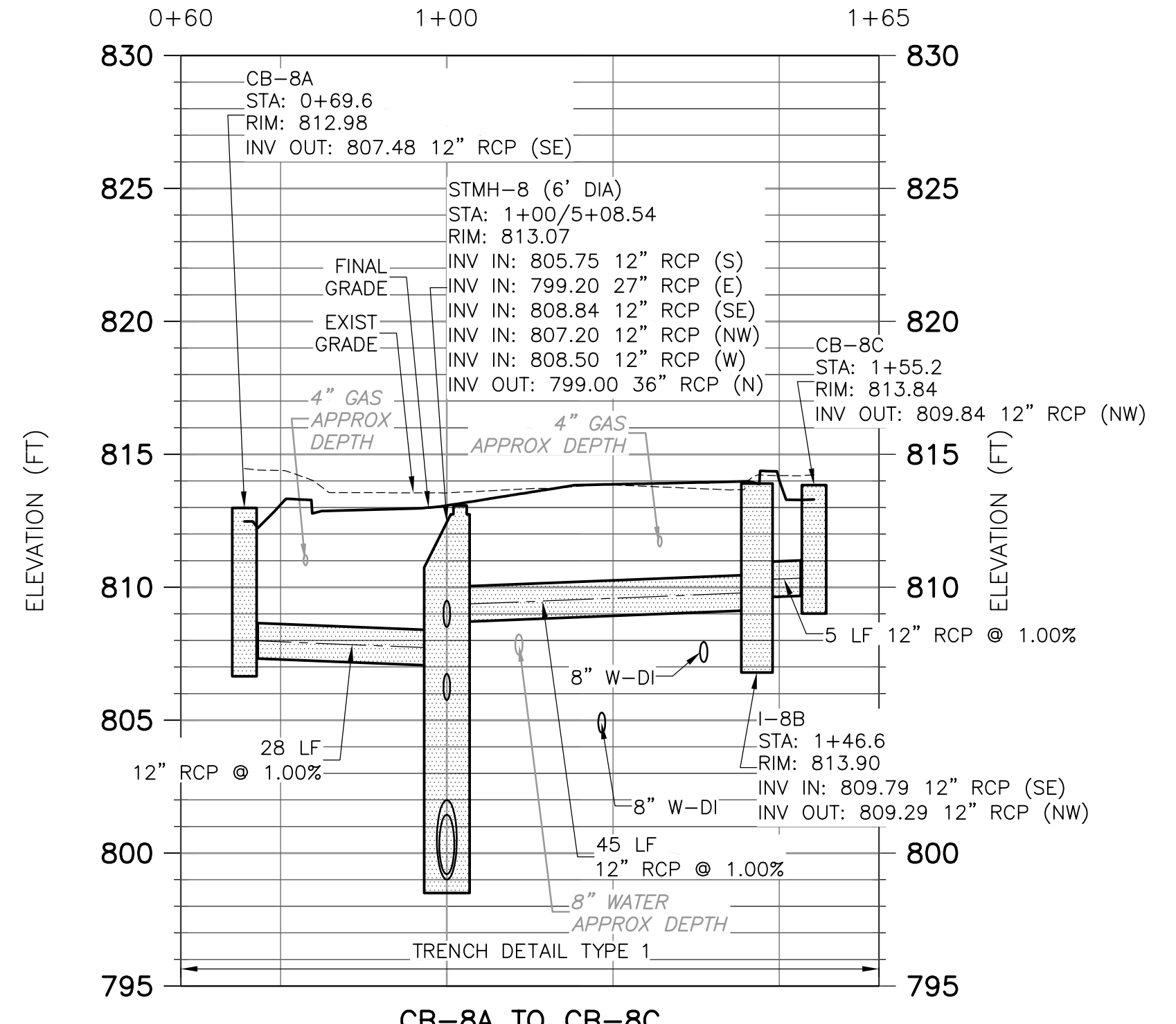




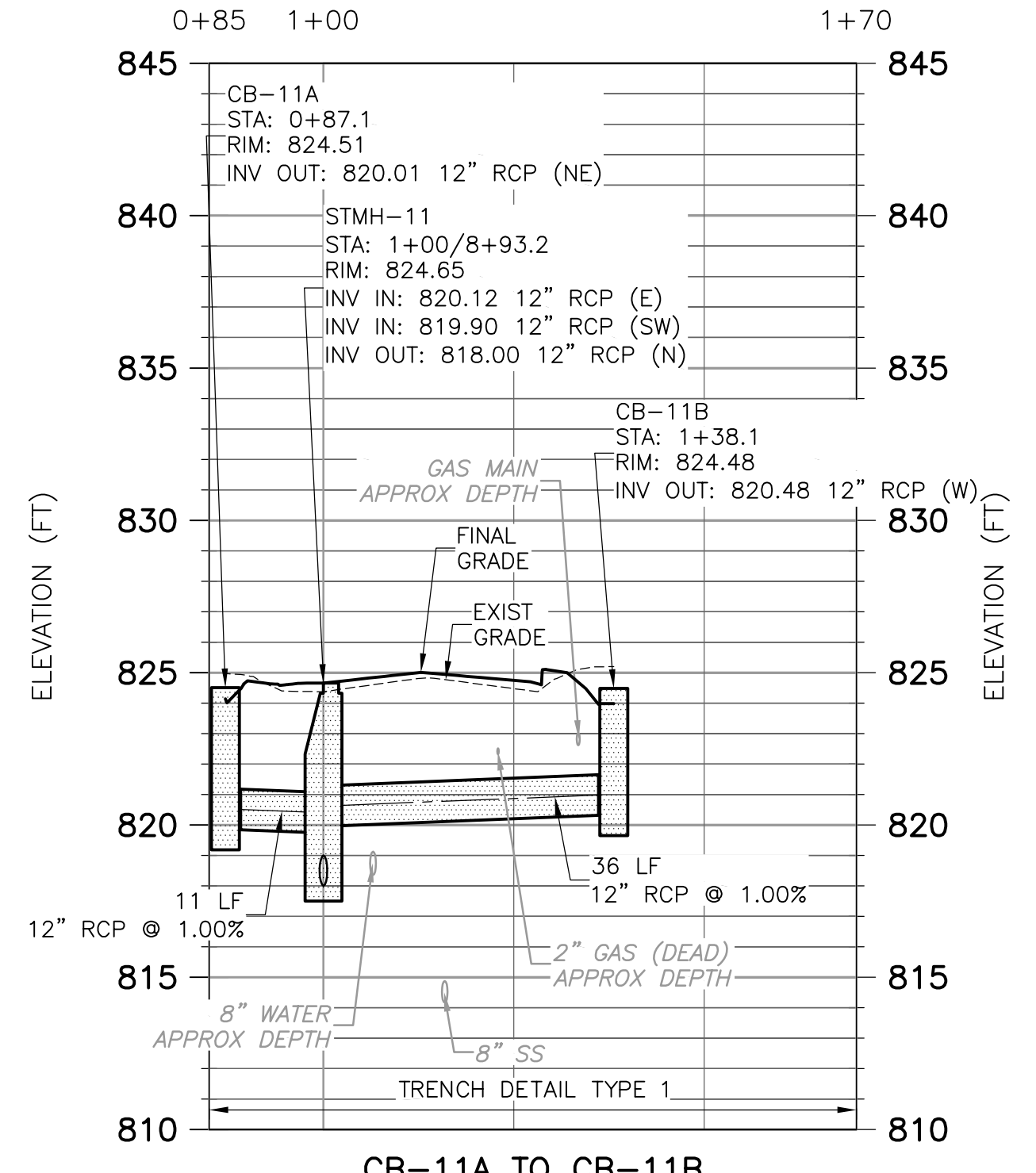
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**PLAN**  
1" = 20'

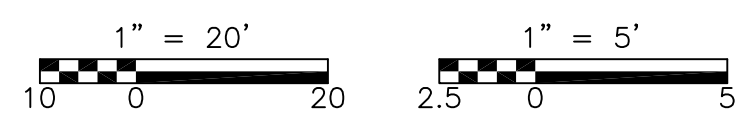


**CB-8A TO CB-8C**  
**PROFILE**  
HORIZONTAL: 1" = 20'  
VERTICAL: 1" = 5'



**CB-11A TO CB-11B**  
**PROFILE**  
HORIZONTAL: 1" = 20'  
VERTICAL: 1" = 5'

**NOTE:**  
SEE STORM STRUCTURE TABLE ON SHEET C-5.



REV. NO.	DATE	DRWN	CHKD	REMARKS



DESIGNED BY: A. CHAN  
 DRAWN BY: C. MILLER  
 SHEET CHK'D BY: J. ZAWACKI  
 CROSS CHK'D BY: B. SMITH  
 APPROVED BY: J. ZAWACKI  
 DATE: MAY 2014



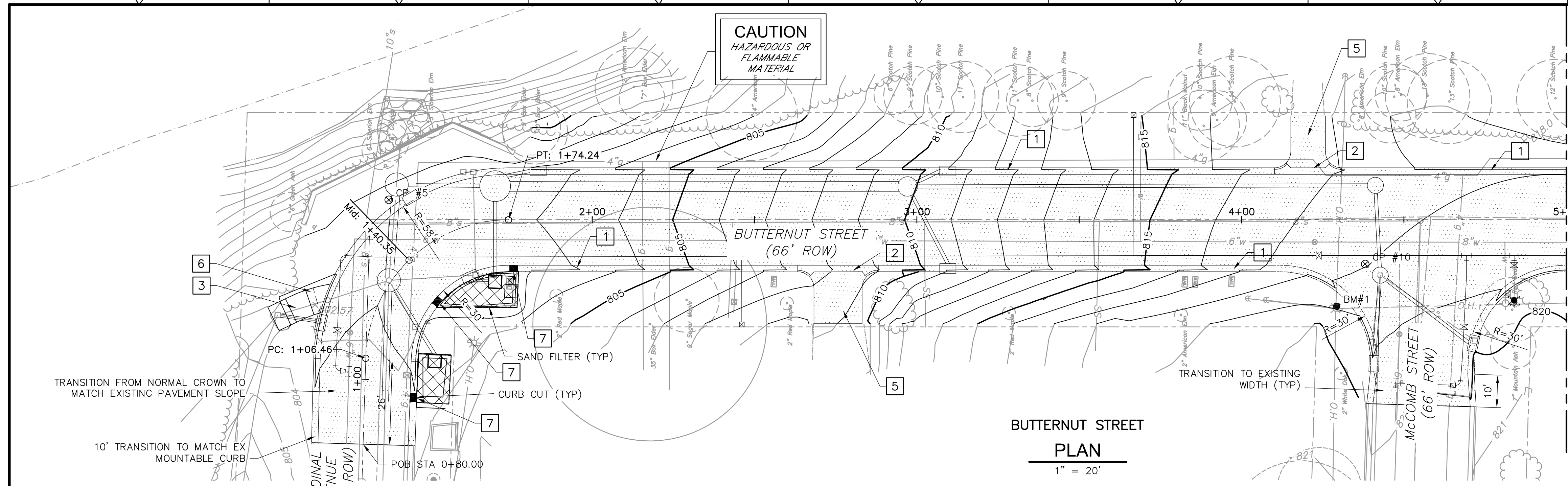
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NORDMAN ROAD  
 STORM SEWER  
 PLAN AND PROFILES  
 PROJECT NO. 1400-100237  
 FILE NAME: CO24STPP.DWG  
 SHEET NO.  
**C-24**

PROJECT NO. 1400-100237  
 FILE NAME: CO24STPP.DWG  
 SHEET NO.  
**C-24**

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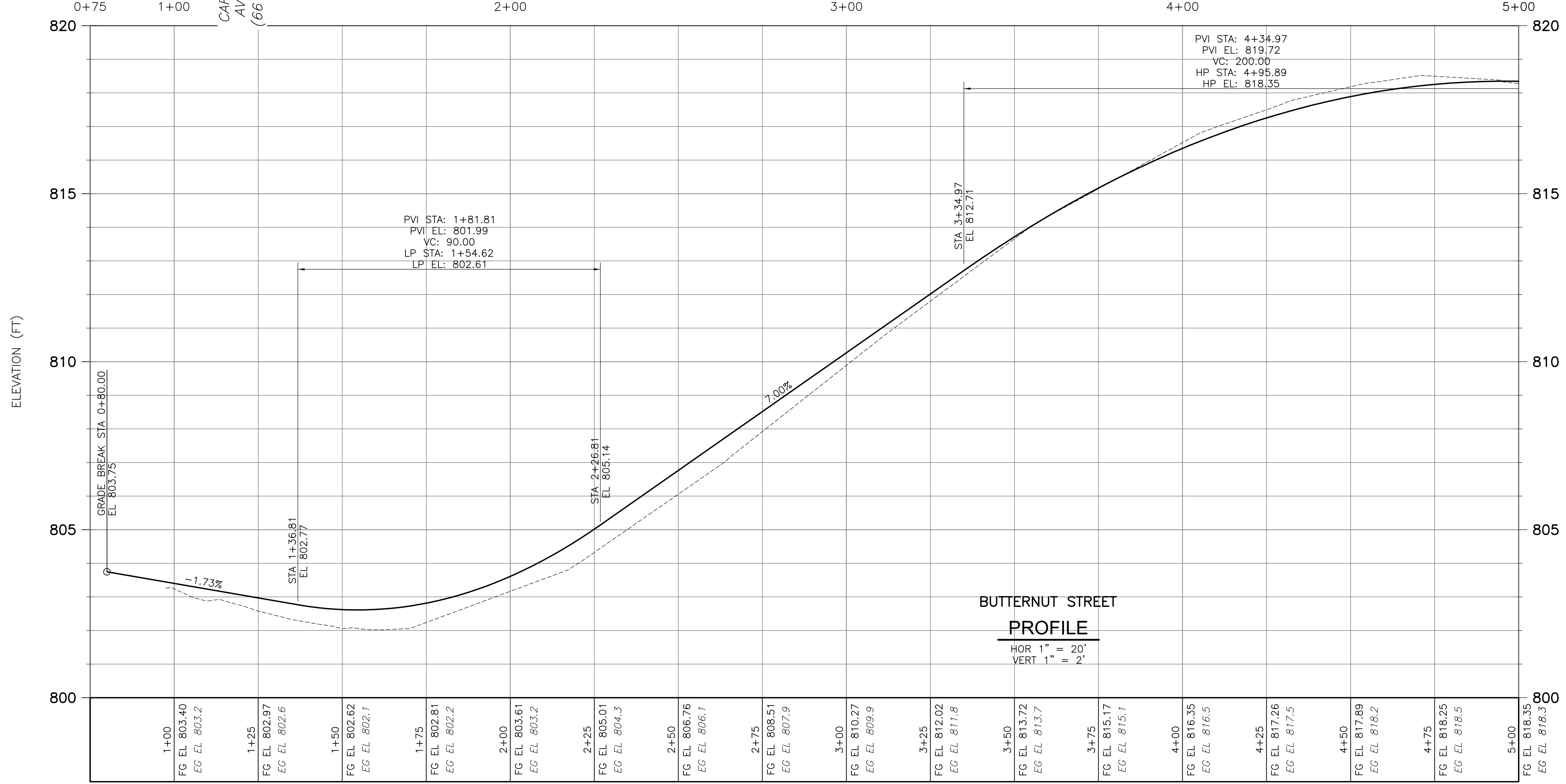
**BUTTERNUT STREET  
PLAN**  
1" = 20'

CURB CUT TABLE		
STATION	WIDTH	GFL-2"
0+94.9 RT	2'-6"	802.87
1+36.3 RT	2'-6"	802.15
1+75.9 RT	2'-6"	802.21

DRIVEWAY SLOPE TABLE	
STATION	PR SLOPE (EX)
2+75 RT	7% (9%)
4+19 LT	0% (-1%)

SAND FILTER TABLE		
STATION RANGE	WIDTH	ELEV
0+93.4 RT TO 1+09.5 RT	10'-0"	802.2
1+33.8 RT TO 1+77.3 RT	VARIABLE, 11'-0" MAX	801.7

CONSTRUCTION KEY	
KEY	DESCRIPTION
1	CONCRETE CURB AND GUTTER - ALL TYPES
2	CONCRETE CURB AND GUTTER - ALL TYPES (HIGH EARLY)
3	4 INCH CONCRETE SIDEWALK
4	6 INCH CONCRETE SIDEWALK RAMP
5	6 INCH CONCRETE DRIVE (HIGH EARLY)
6	DETECTABLE WARNING, CAST IN PLACE
7	CURB CUT AND SPILLWAY



**BUTTERNUT STREET  
PROFILE**  
HOR 1" = 20'  
VERT 1" = 2'

REV. NO.	DATE	DRWN	CHKD	REMARKS



DESIGNED BY: B. SMITH  
 DRAWN BY: C. ANDERSON  
 SHEET CHK'D BY: J. ZAWACKI  
 CROSS CHK'D BY: B. SMITH  
 APPROVED BY: J. ZAWACKI  
 DATE: MAY 2014



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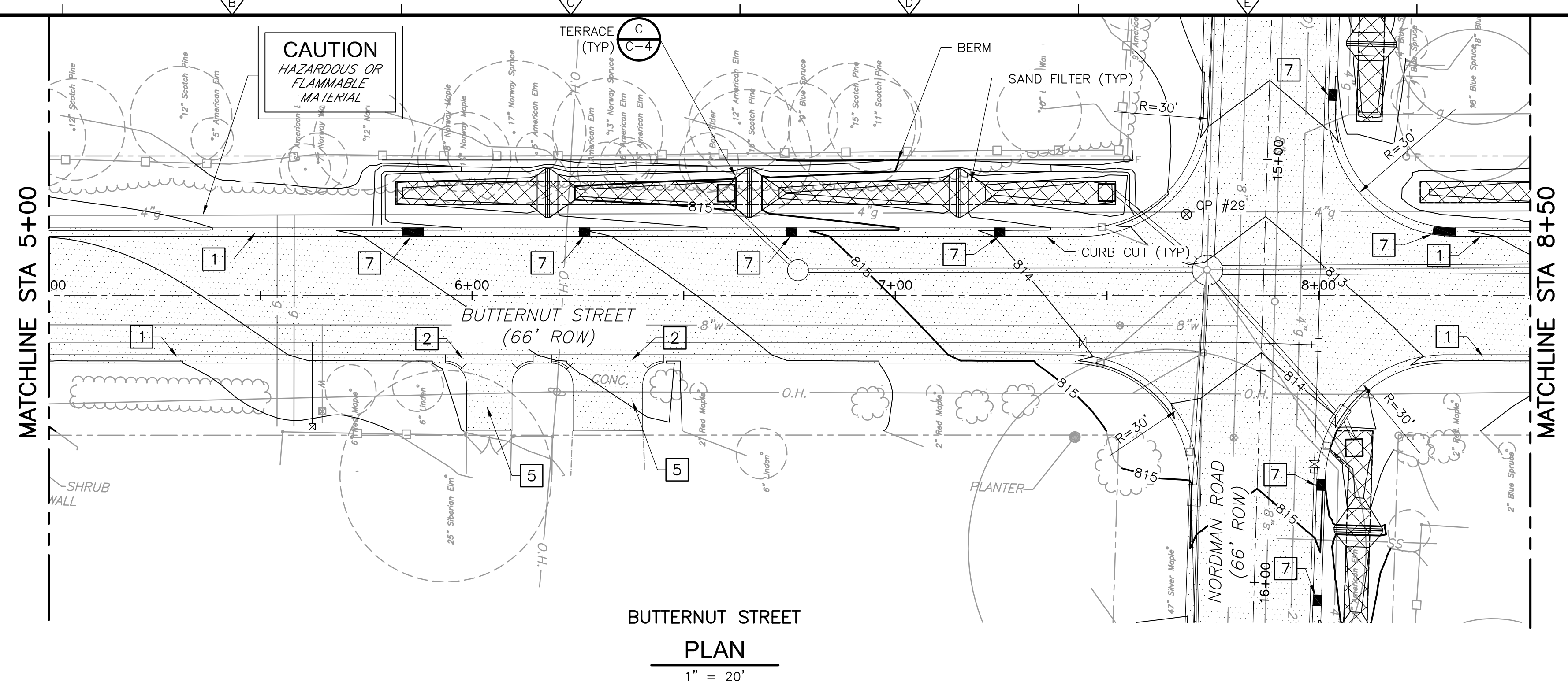
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BUTTERNUT STREET  
 ROAD PLAN & PROFILE  
 STA 0+80 TO STA 5+00

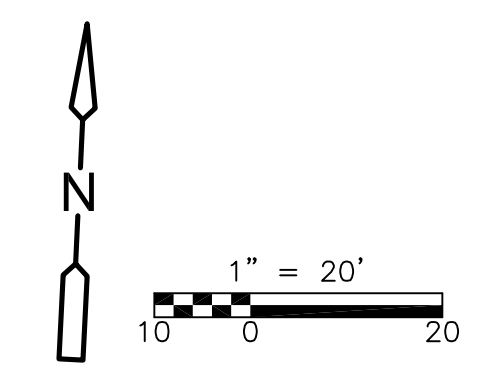
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 FILE NAME: C025STPP.DWG  
 SHEET NO. C-25



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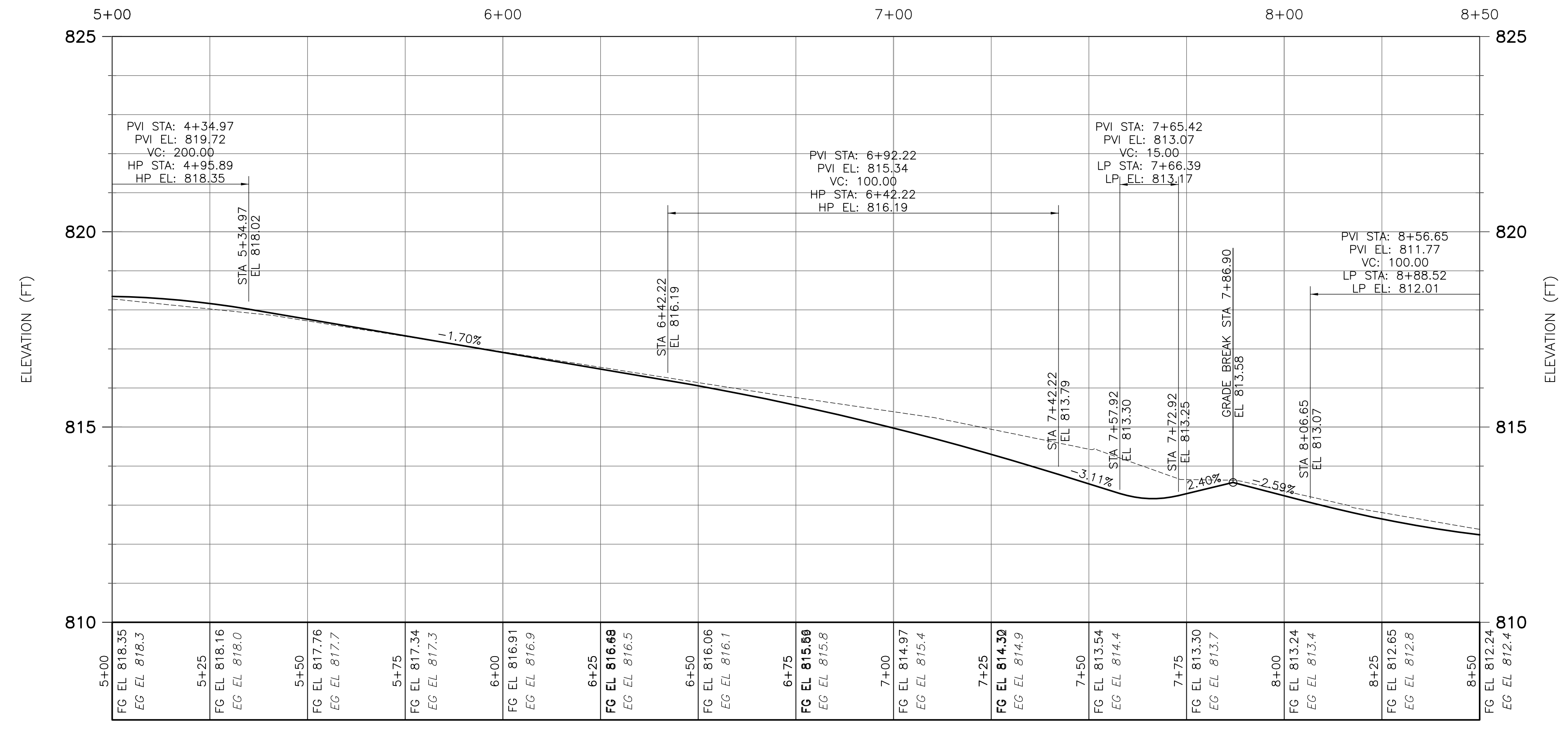
**BUTTERNUT STREET**  
**PLAN**  
 1" = 20'



CURB CUT TABLE		
STATION	WIDTH	GFL-2"
5+86.0 LT	5'-0"	816.53
6+26.5 LT	2'-6"	815.84
6+75.5 LT	2'-6"	814.93
7+24.6 LT	2'-6"	813.69
8+29.8 LT	5'-0"	811.93

DRIVEWAY SLOPE TABLE	
STATION	PR SLOPE (EX)
6+05 RT	4% (10%)
6+35 RT	3% (8%)

SAND FILTER TABLE		
STATION RANGE	WIDTH	ELEV
5+82.0 LT TO 6+17.8 LT	5'-6"	815.6
6+17.8 LT TO 6+65.5 LT	5'-6"	814.7
6+65.5 LT TO 7+15.0 LT	5'-6"	813.6
7+15.0 LT TO 7+52.0 LT	5'-6"	812.5
8+24.0 LT (SEE SHEET C-27)	-	-



**BUTTERNUT STREET**  
**PROFILE**  
 HOR 1" = 20'  
 VERT 1" = 2'

CONSTRUCTION KEY	
KEY	DESCRIPTION
1	CONCRETE CURB AND GUTTER - ALL TYPES
2	CONCRETE CURB AND GUTTER - ALL TYPES (HIGH EARLY)
3	4 INCH CONCRETE SIDEWALK
4	6 INCH CONCRETE SIDEWALK RAMP
5	6 INCH CONCRETE DRIVE (HIGH EARLY)
6	DETECTABLE WARNING, CAST IN PLACE
7	CURB CUT AND SPILLWAY

REV. NO.	DATE	DRWN	CHKD	REMARKS



DESIGNED BY: B. SMITH  
 DRAWN BY: C. ANDERSON  
 SHEET CHK'D BY: J. ZAWACKI  
 CROSS CHK'D BY: B. SMITH  
 APPROVED BY: J. ZAWACKI  
 DATE: MAY 2014



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**IMPROVEMENTS PROJECT**

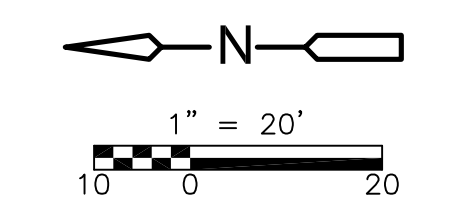
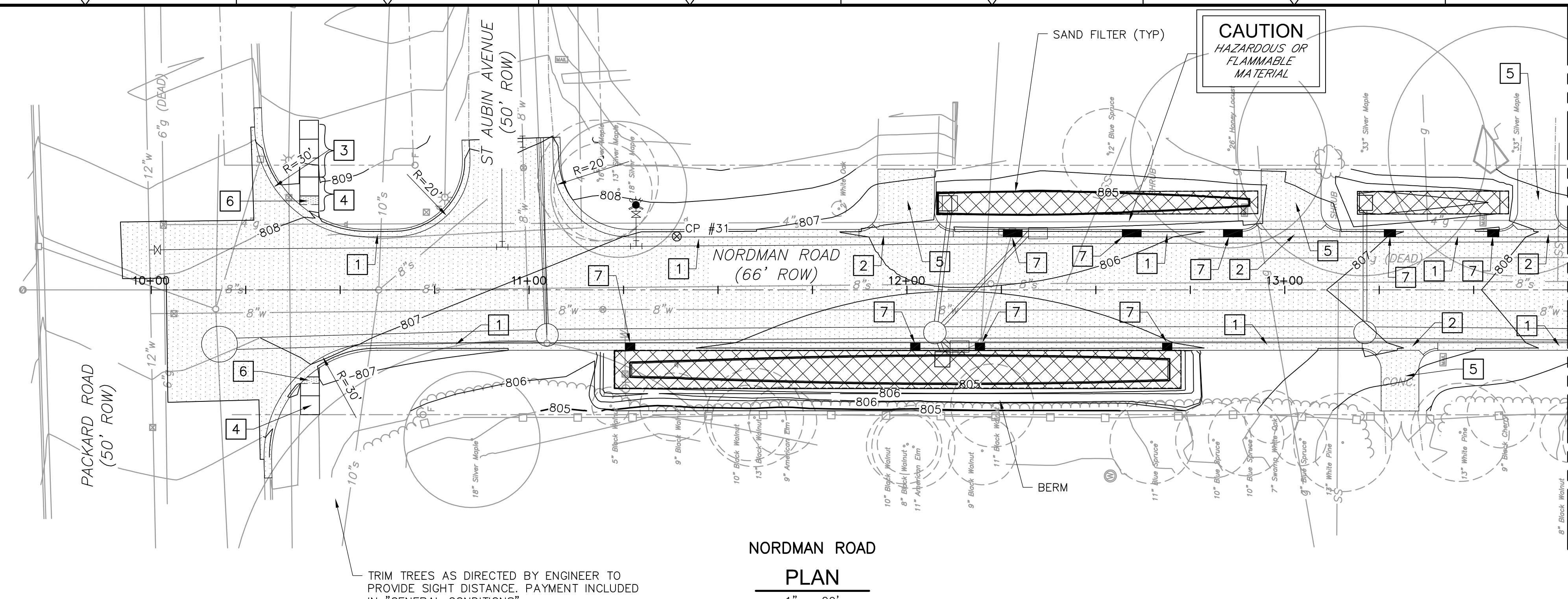
**BUTTERNUT STREET**  
**ROAD PLAN & PROFILE**  
**STA 5+00 TO STA 8+50**

PROJECT NO. 1400-100237  
 FILE NAME: C0265TPP.DWG  
 SHEET NO.  
**C-26**





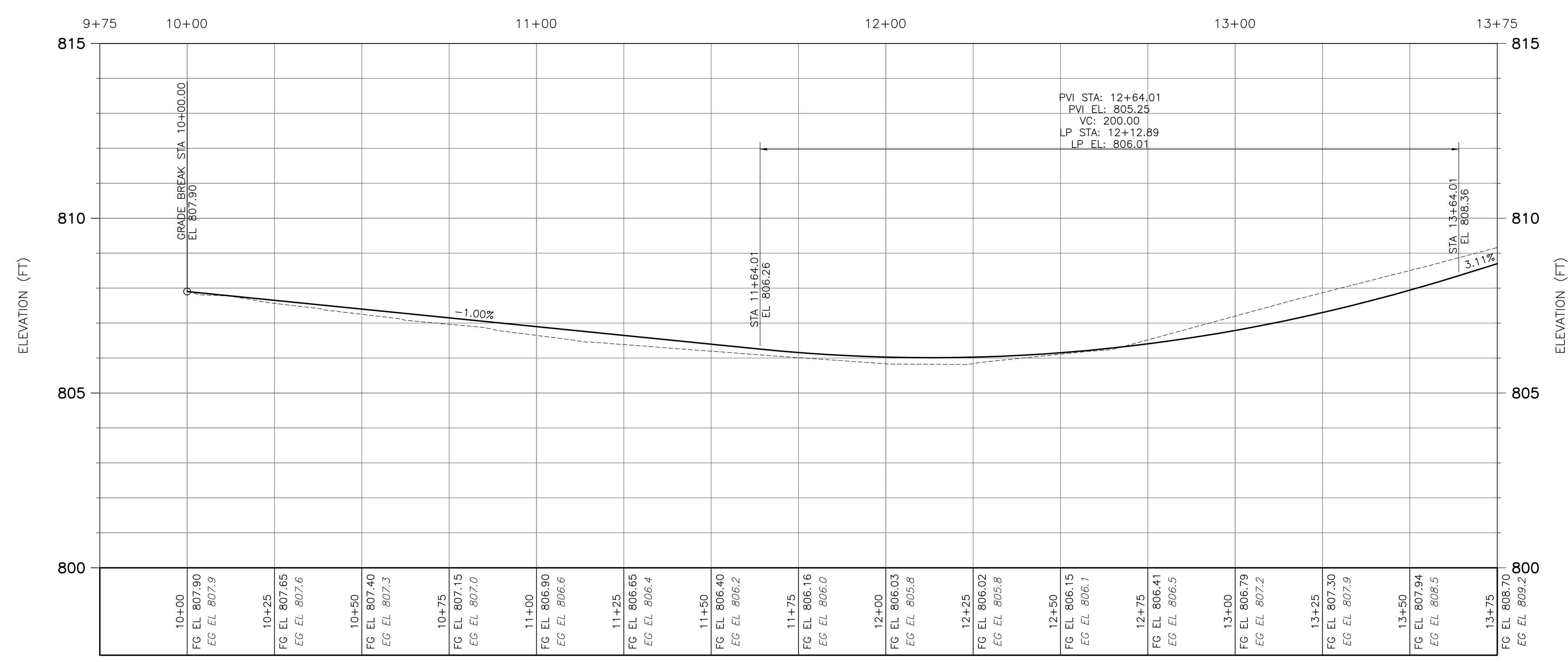
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CURB CUT TABLE		
STATION	WIDTH	GSL-2"
11+26.7 RT	2'-6"	806.01
12+02.2 RT	2'-6"	805.40
12+19.3 RT	2'-6"	805.39
12+28.0 LT	5'-0"	805.46
12+59.5 LT	5'-0"	805.61
12+68.9 RT	2'-6"	805.71
12+86.3 LT	5'-0"	805.94
13+27.8 LT	2'-6"	806.75
13+55.1 LT	2'-6"	807.47

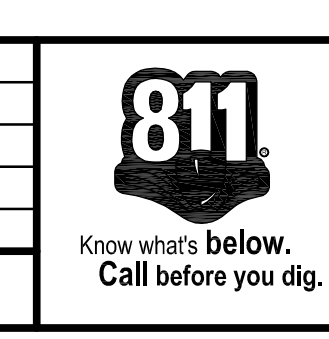
DRIVEWAY SLOPE TABLE	
STATION	PR SLOPE (EX)
12+00 LT	12% (17%)
13+02 LT	7% (5%)
13+30 RT	10% (7%)
13+66 LT	10% (7%)

SAND FILTER TABLE		
STATION RANGE	WIDTH	ELEV
11+22.5 RT TO 12+72.5 RT	10'-0"	804.9
12+07.9 LT TO 12+92.9 LT	6'-0"	804.9
13+19.2 LT TO 13+59.2 LT	6'-0"	806.2

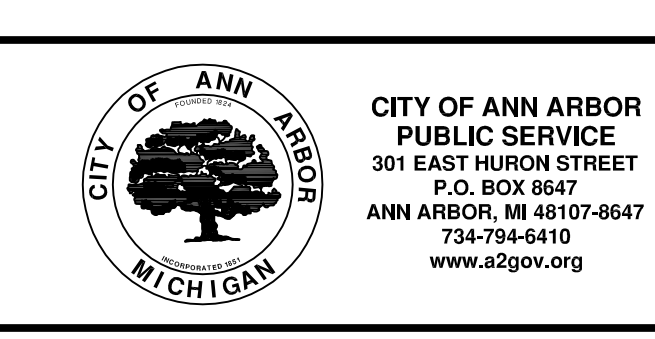


CONSTRUCTION KEY	
KEY	DESCRIPTION
1	CONCRETE CURB AND GUTTER - ALL TYPES
2	CONCRETE CURB AND GUTTER - ALL TYPES (HIGH EARLY)
3	4 INCH CONCRETE SIDEWALK
4	6 INCH CONCRETE SIDEWALK RAMP
5	6 INCH CONCRETE DRIVE (HIGH EARLY)
6	DETECTABLE WARNING, CAST IN PLACE
7	CURB CUT AND SPILLWAY

REV. NO.	DATE	DRWN	CHKD	REMARKS



DESIGNED BY: B. SMITH  
 DRAWN BY: C. ANDERSON  
 SHEET CHK'D BY: J. ZAWACKI  
 CROSS CHK'D BY: B. SMITH  
 APPROVED BY: J. ZAWACKI  
 DATE: MAY 2014



CITY OF ANN ARBOR, MICHIGAN  
**SPRINGWATER SUBDIVISION  
 IMPROVEMENTS PROJECT**

**NORDMAN ROAD  
 ROAD PLAN & PROFILE  
 STA 10+00 TO STA 13+75**

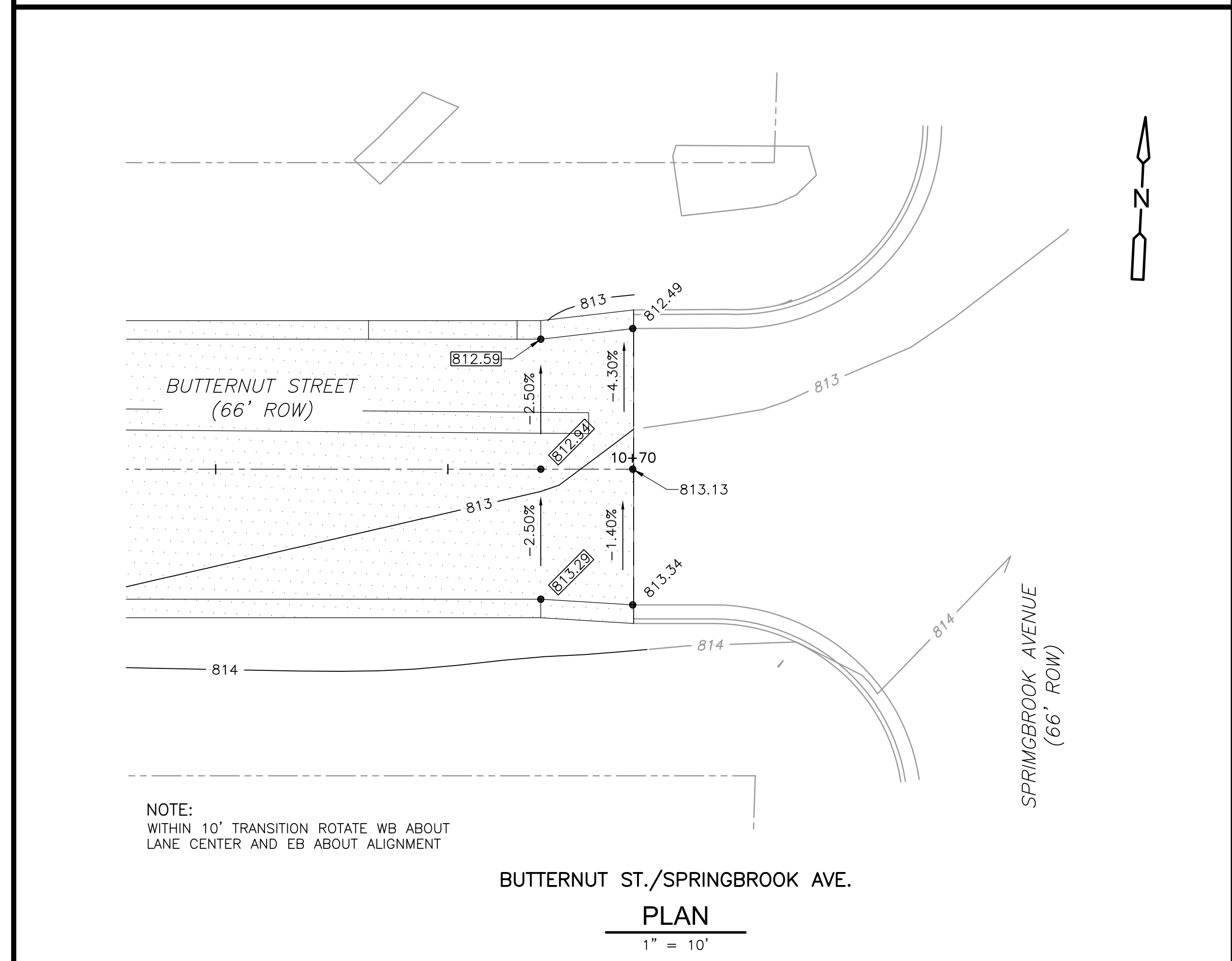
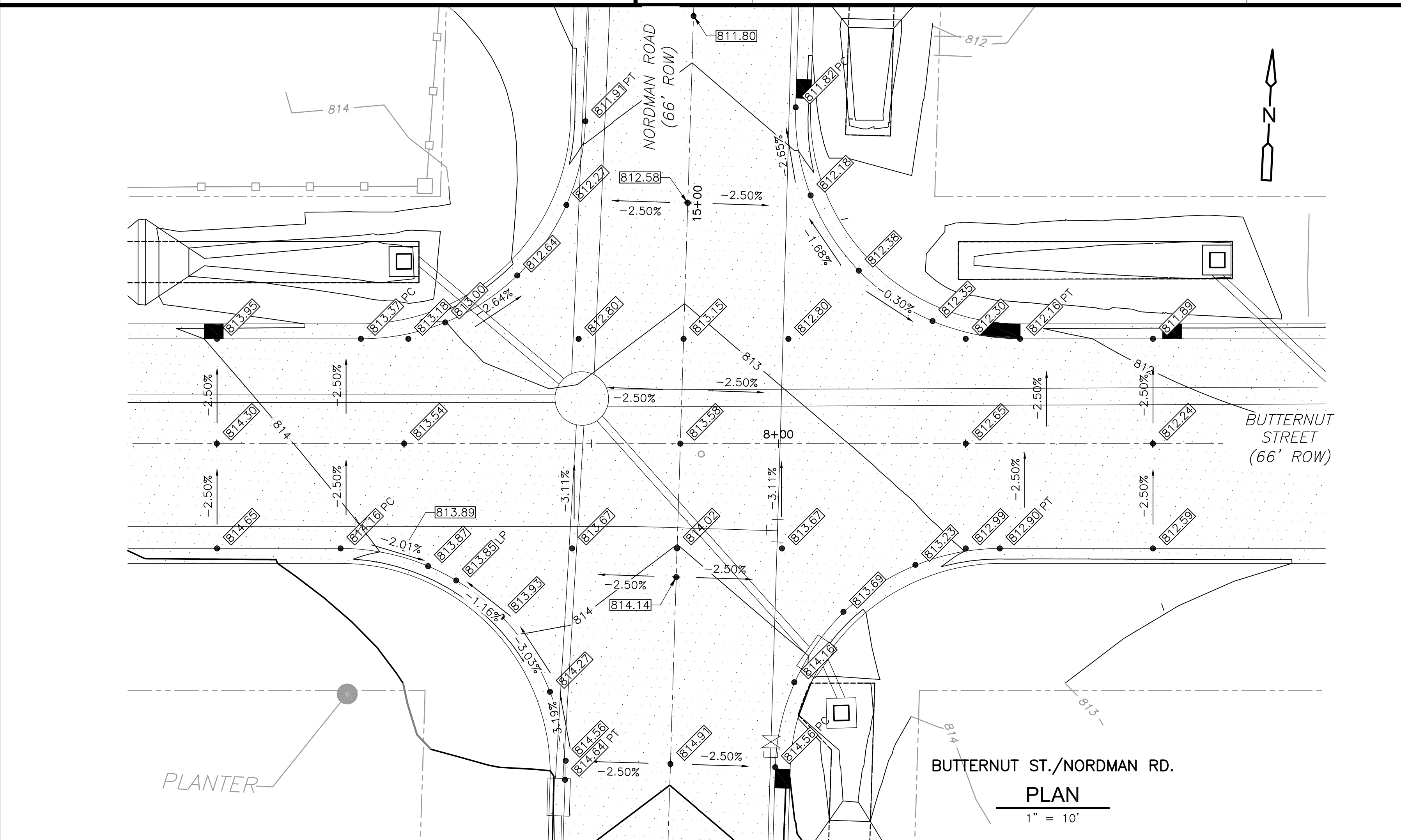
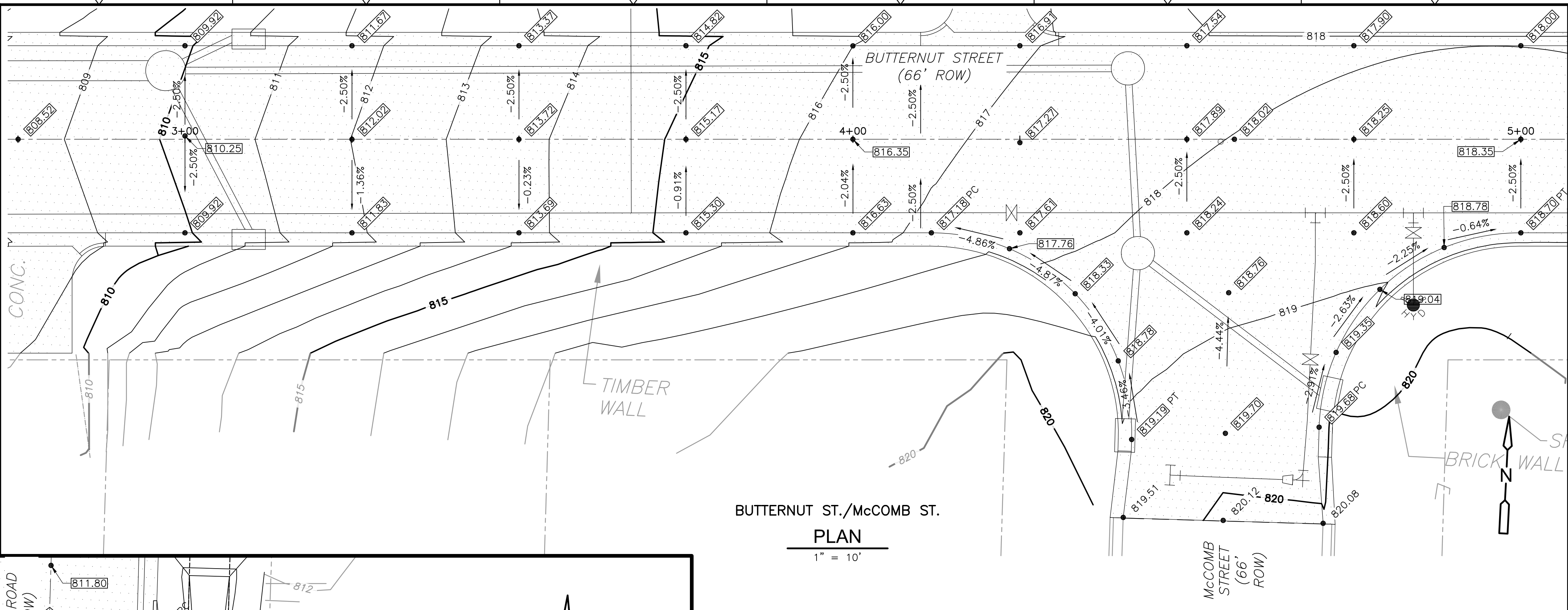
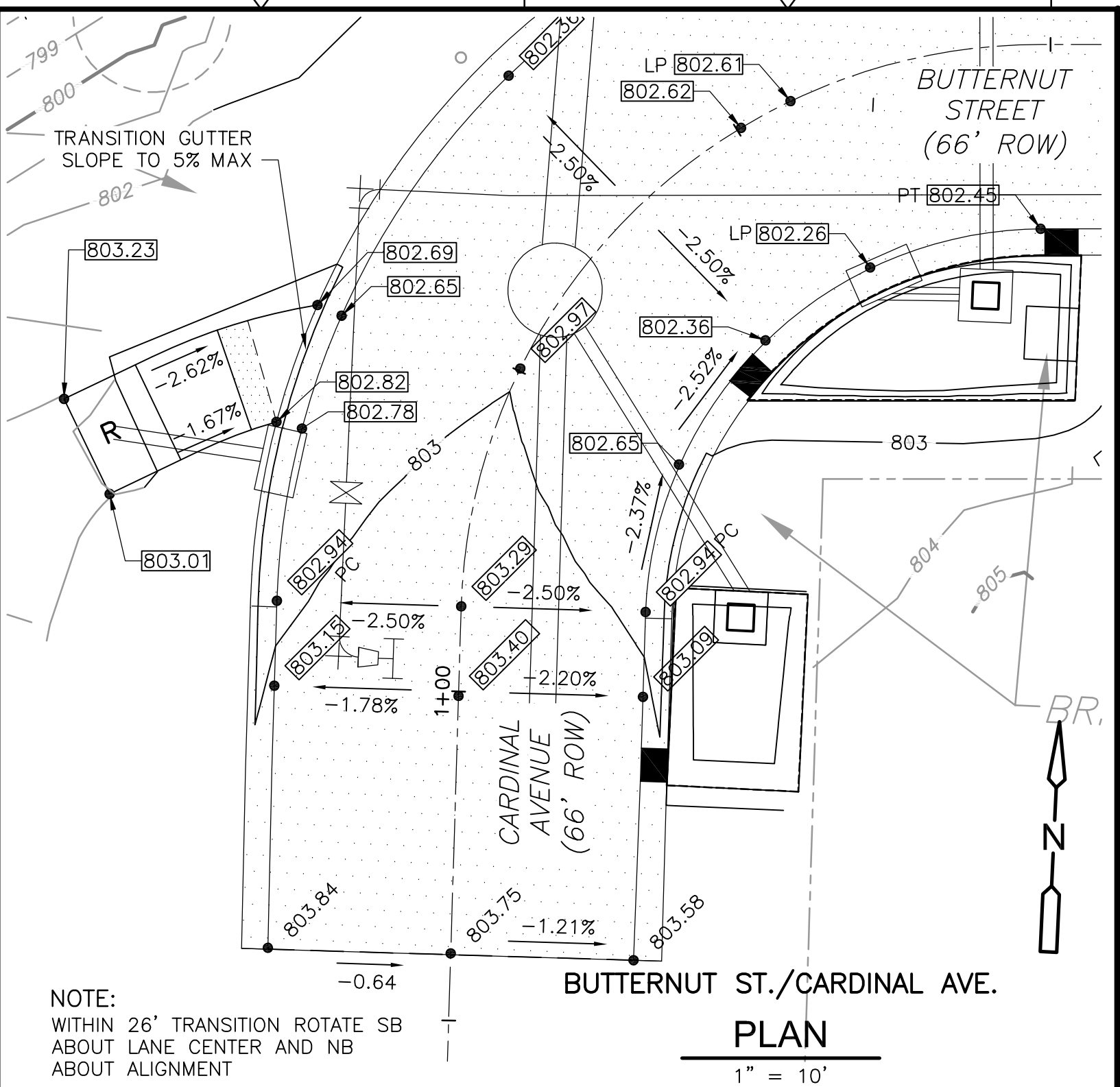
PROJECT NO. 1400-100237  
 FILE NAME: CO28STPP.DWG  
 SHEET NO.  
**C-28**







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REV. NO.	DATE	DRWN	CHKD	REMARKS



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CITY OF ANN ARBOR, MICHIGAN  
 SPRINGWATER SUBDIVISION  
 IMPROVEMENTS PROJECT

INTERSECTION GRADING PLANS  
 C-31

PROJECT NO. 1400-100237  
 FILE NAME: C031NTR.DWG  
 SHEET NO. C-31





