CITY OF SOUTH HAVEN

CONTRACT #1 - NORTH SHORE DRIVE RECONSTRUCTION PROJECT

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R–30 CONCRETE CURB AND CONCRETE CURB & GUTTER
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TRAFFIC AND SAFETY STANDARD PLANS

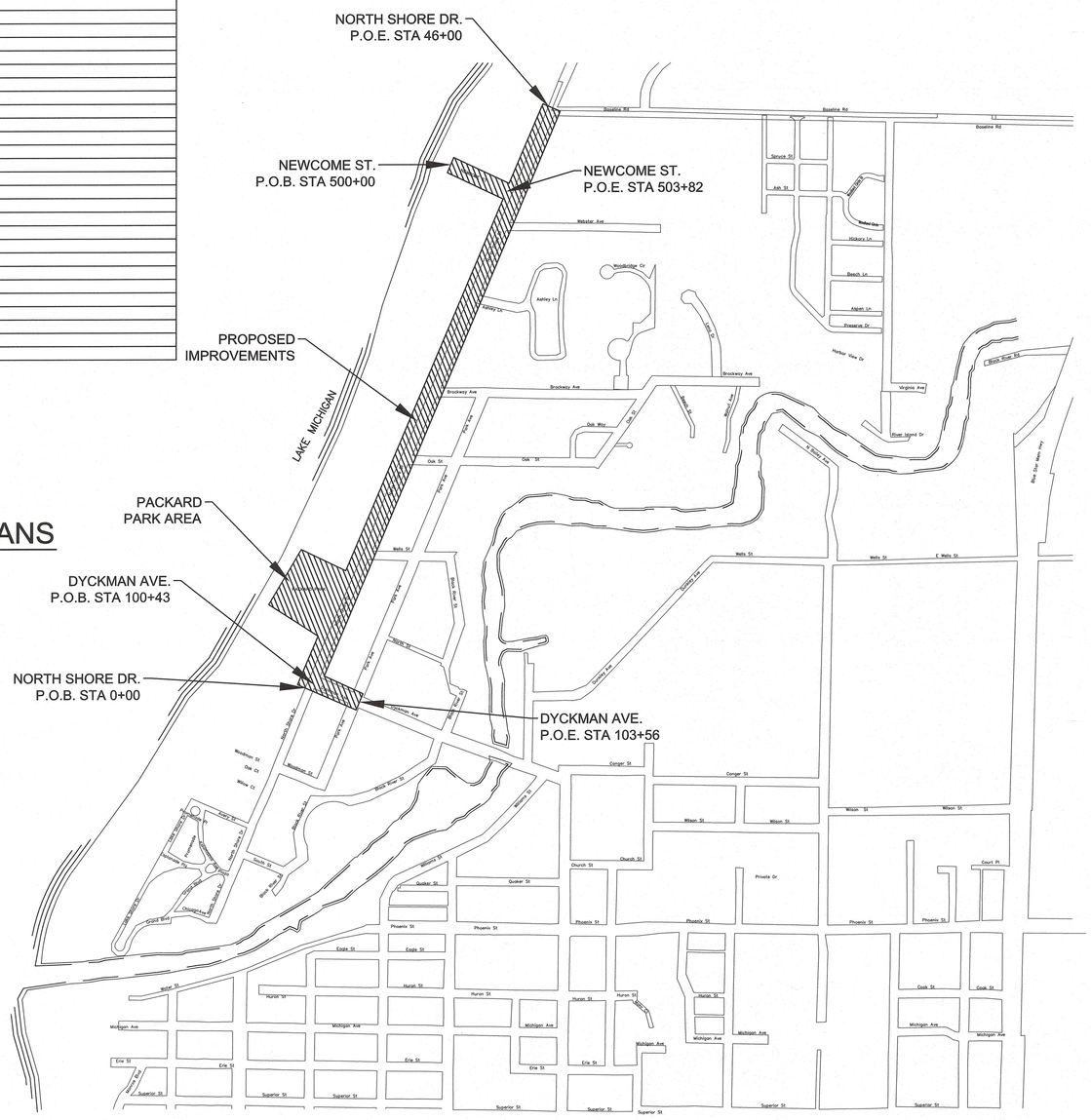
WZD–100–A GROUND DRIVEN SIGN SUPPORTS FOR TEMPORARY SIGNS *
WZD–125–E TEMPORARY TRAFFIC CONTROL DEVICES*

* DENOTES SPECIAL DETAIL

COUNTY KEY

NOTES:

EXCEPT WHERE OTHERWISE INDICATED ON THESE PLANS OR IN THE PROPOSAL AND SUPPLEMENTAL SPECIFICATIONS CONTAINED THEREIN, ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2012 MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION.



PROJECT LOCATION MAP

NOT TO SCALE

CITY OF SOUTH HAVEN OFFICIALS

MAYOR	ROBERT BURR
CITY COUNCIL MEMBER – WARD ONE	SCOTT SMITH
CITY COUNCIL MEMBER – WARD ONE	VICKIY KOZLIK WALL
CITY COUNCIL MEMBER – WARD TWO	JEFF ARNOLD
CITY COUNCIL MEMBER – WARD TWO	CLARK GRUBER
CITY COUNCIL MEMBER – WARD THREE	ANDY KLAVINS
CITY COUNCIL MEMBER – WARD THREE	STEVE SCHLACK
CITY MANAGER	BRIAN DISSETTE
CITY ENGINEER	LARRY HALBERSTADT, PE

LOCAL UTILITIES

GAS:
MICHIGAN GAS UTILITIES
SCOTT PURUCKER
711 STARLITE DR.
BENTON HARBOR, MI 49022
(269) 927–5531

ELECTRIC:
CITY OF SOUTH HAVEN
ELECTRIC DEPT.
JIM PEZZUTO
1199 8TH AVENUE
SOUTH HAVEN, MI 49090
(269) 637–0756

TELEPHONE:
FRONTIER COMMUNICATIONS
MIKE KARLE
601 N. US–131
THREE RIVERS, MI 49093
(269) 273–0383

SEWER & WATER:
CITY OF SOUTH HAVEN
PUBLIC WORKS
RON DOTSON
1199 8TH AVENUE
SOUTH HAVEN, MI 49090
(269) 637–0719

CABLE:
COMCAST
JOE SCHOPF
11921 EAST M–89
RICHLAND, MI 49083
(269) 203–7199

INTERNET:
BLOOMINGDALE COMMUNICATIONS
P.O. BOX 187
101 W. KALAMAZOO STREET
BLOOMINGDALE, MI 49026
MR. DAN KEY
(269) 521–7300
DKEY@BLOOMINGDALECOM.NET

MERIT NETWORK INC.
1000 OAKBROOK DRIVE, SUITE 200
ANN ARBOR, MI 48104–6794
(734) 527–5700
WWW@MERIT.EDU

CALL MISS DIG

1–800–482–7171 OR 811

FOR PROTECTION OF THE UNDERGROUND UTILITIES, THE CONTRACTOR SHALL CALL MISS DIG A MINIMUM OF THREE FULL WORKING DAYS, EXCLUDING SATURDAYS, SUNDAYS, AND HOLIDAYS PRIOR TO BEGINNING CONSTRUCTION OPERATIONS. MEMBERS WILL THUS BE ROUTINELY NOTIFIED. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO MAY NOT BE PART OF THE "MISS DIG" ALERT SYSTEM.

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

STATE OF MICHIGAN
TIMOTHY R. DREWS
ENGINEER
No. 40957
LICENSED PROFESSIONAL ENGINEER

ABONMARCHE
Confidence By Design

DATE: MAY 2016

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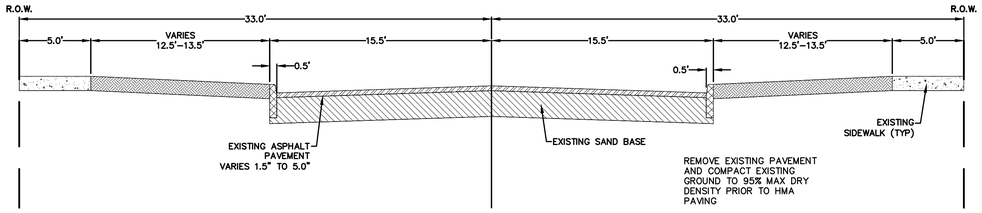
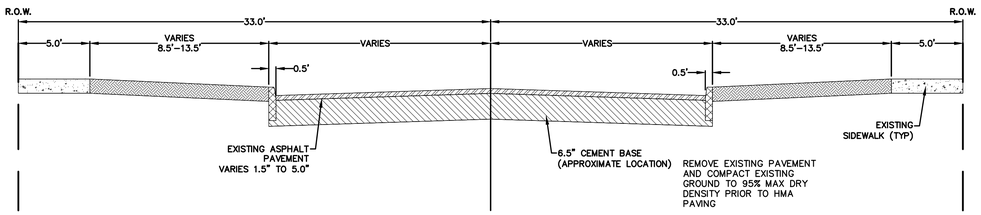
1 OF 51 CITY OF SOUTH HAVEN
NORTH SHORE DRIVE RECONSTRUCTION PROJECT
ACI JOB # 14-0890

E:\CIVIL2\DENO_2014\14-0890 NORTH SHORE DRIVE\Dwg\14-0890 TL.dwg, L-6/6/2016 5:15:58 PM, ardurta, 1:1



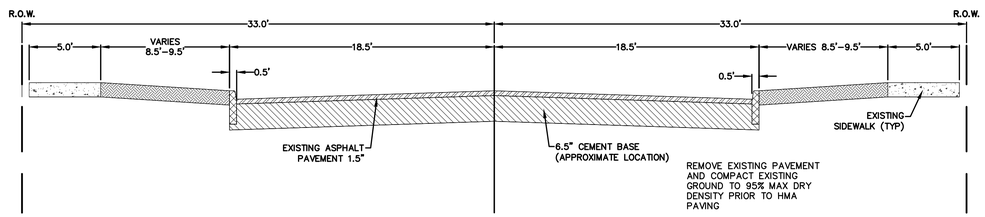
EXISTING CROSS SECTION NORTH SHORE DRIVE STATIONS 0+75 TO 23+25

SCALE HORZ 1"=5'
VERT 1"=2.5'



EXISTING CROSS SECTION NORTH SHORE DRIVE STATIONS 23+25 TO 26+25

SCALE HORZ 1"=5'
VERT 1"=2.5'



EXISTING CROSS SECTION NORTH SHORE DRIVE STATIONS 26+25 TO 46+00

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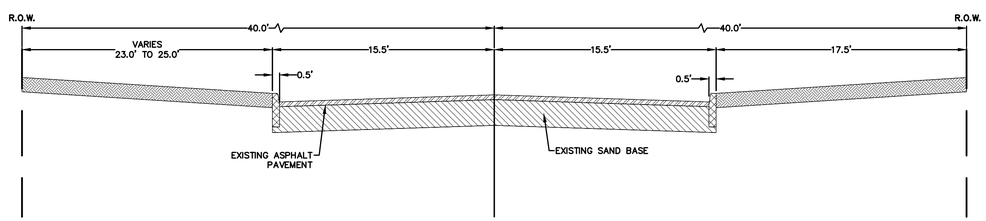
VERT 1"=2.5'



EXISTING CROSS SECTION DYCKMAN AVE STATIONS 100+43 TO 103+75

SCALE HORZ 1"=5'
VERT 1"=2.5'

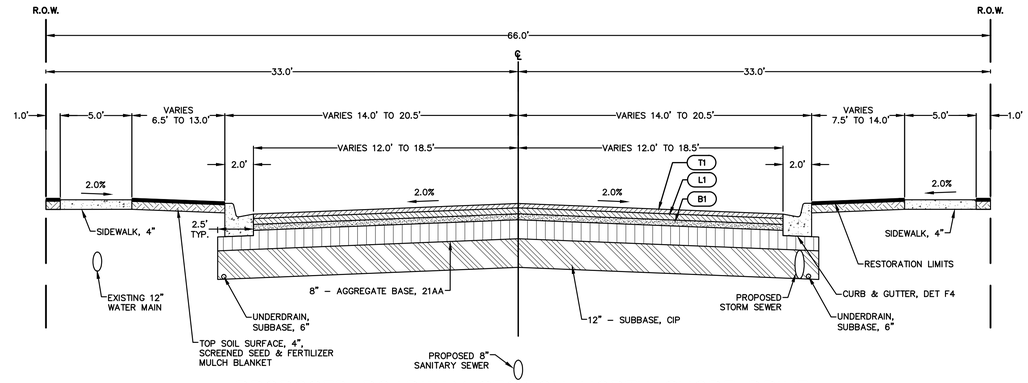
HMA APPLICATION TABLE

STREET	ID	MIXTURE	RATE (LBS/SYD)	PERFORMANCE GRADE	TYPE
NORTH SHORE DR. & DYCKMAN AVENUE & BASELINE ROAD	T1	HMA, 5E3	165	64 – 28	TOP COURSE (AWI=260)
	L1	HMA, 4E3	220	64 – 28	LEVELING COURSE
	B1	HMA, 4E3	220	64 – 28	BASE COURSE
NEWCOME & SIDE STREETS	T2	HMA, 5E3	220	64 – 28	TOP COURSE (AWI=260)
	L2	HMA, 4E3	220	64 – 28	LEVELING COURSE

* HMA BOND COAT 0.05 TO 0.15 GAL/SYD REQUIRED BETWEEN ASPHALT LIFTS. (NOT A PAY ITEM)
ALL HMA WILL BE PAID AS THEIR RESPECTIVE ITEMS.
INTERSECTIONS WILL BE PAID FOR AS MAINLINE PAVING AND NOT HMA APPROACH.

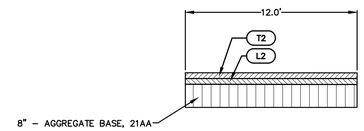
HATCH LEGEND

- TOP COURSE HMA, 5E3
- LEVELING COURSE HMA, 4E3
- BASE COURSE HMA, 4E3
- AGGREGATE BASE, 21AA, 8 INCH
- SUBBASE, CIP
- SIDEWALK, CONC 4 INCH
- RESTORATION LIMITS

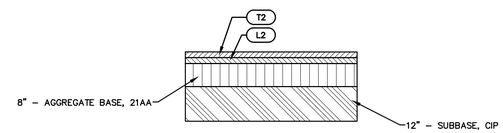


PROPOSED ROADWAY SECTION NORTH SHORE DRIVE STATION 0+75 TO 47+25

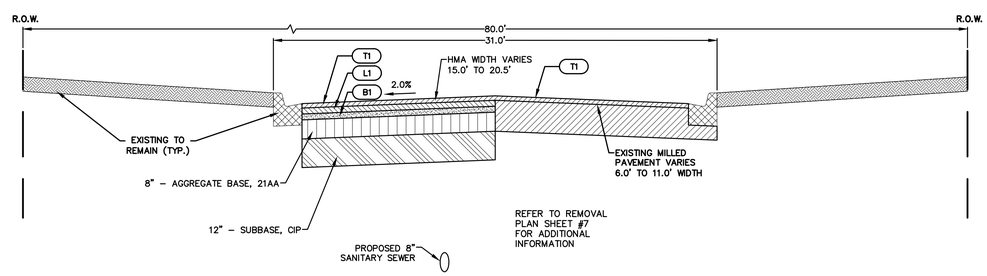
SCALE HORZ 1"=5'
VERT 1"=2.5'



PROPOSED ROADWAY SECTION NEWCOME STREET STA 501+78 TO 503+63



PROPOSED APPROACH SECTION AT SIDE STREETS WELLS, OAK, BROCKWAY, & WEBSTER



PROPOSED ROADWAY SECTION DYCKMAN AVE STATION 100+43 TO 103+75

SCALE HORZ 1"=5'
VERT 1"=2.5'

NO.	REVISION DESCRIPTION:	BY:	DATE:

Engineering
Architecture
Land Surveying
Marina/Waterfront
Construction Management
Landscape Architecture
Development Services

ABONMARCHE
Confidence By Design

Manistee, MI
Traverse City, MI
South Bend, IN
Portage, IN

75 West Main Street
Benton Harbor, MI 49023
T 269.927.2295
F 269.927.1017

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PROJECT:
NORTH SHORE DRIVE
RECONSTRUCTION PROJECT
CITY OF SOUTH HAVEN
VAN BUREN COUNTY, MI

SHEET TITLE:
EXISTING AND PROPOSED ROAD CROSS SECTIONS

DRAWN BY: SPJ/SCR
DESIGNED BY: CAK/SPJ/LT
PM REVIEW: TRD
QA/QC REVIEW:
DATE: MAY 2016
SEAL:

SIGNATURE:
DATE:

HARD COPY IS INTENDED TO BE 24" X 36" WHEN PLOTTED. SCALE(S) INDICATED AND GRAPHIC QUALITY MAY NOT BE ACCURATE FOR ANY OTHER SIZES

SCALE:
HORZ: 1"=5'
VERT: 1"=2.5'

ACI JOB #
14-0890

SHEET NO.

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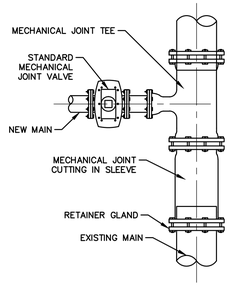
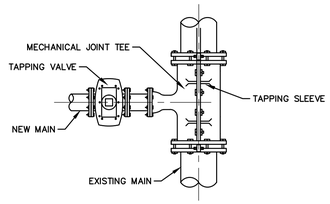


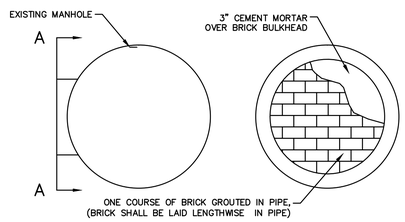
DRY TAP METHOD

CONNECTING NEW MAIN TO EXISTING MAIN
NOT TO SCALE



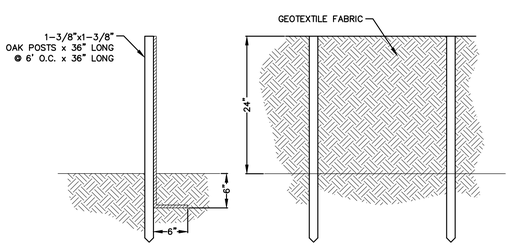
WET TAP METHOD

(UNDER PRESSURE)
CONNECTING NEW MAIN TO EXISTING MAIN
NOT TO SCALE



BULKHEAD DETAIL

NOT TO SCALE



SILT FENCE

NOT TO SCALE

STANDARD LEGEND

- = CATCH BASIN
- = CURB CATCH BASIN
- = ELECTRIC LOCATION
- EMH = ELECTRIC MANHOLE
- = ELECTRIC METER
- = FIRE HYDRANT
- FL = FLAG POLE
- FMON = FOUND MONUMENT
- FIP = FOUND IRON PIPE
- FIR = FOUND IRON ROD
- FX = FOUND X
- G = GAS LOCATION
- GMH = GAS MANHOLE
- = GAS METER
- = GAS VALVE
- MH = GENERAL MANHOLE
- = GUARD POST
- = GUARDRAIL
- = GUY POLE
- = GUY WIRE
- LP = LIGHT POLE
- = MAIL BOX
- PP = POWER POLE
- PP/D = POWER POLE W/DROP
- CO = CLEANOUT
- SMH = SANITARY MANHOLE
- SIR = SET IRON ROD
- = SIGN POST
- SBxxx = SOIL BORING LOCATION
- STMH = STORM MANHOLE
- = STREET SIGN
- T = TELEPHONE LOCATION
- TMH = TELEPHONE MANHOLE
- T = TELEPHONE PEDESTAL
- TP = TELEPHONE POLE
- = TRAFFIC SIGN
- UP = UTILITY POLE
- UP/D = UTILITY POLE W/DROP
- UP/L = UTILITY POLE W/STREET LIGHT
- CS = WATER CURB STOP
- W = WATER LOCATION
- WMH = WATER MANHOLE
- W = WATER METER
- W = WATER VALVE
- W = EXISTING WATER MAIN
- = EXISTING SANITARY SEWER
- = EXISTING STORM SEWER
- = OVERHEAD UTILITIES
- G = GAS MAIN/LINE
- C = BURIED CABLE
- T = BURIED TELEPHONE
- FOC = BURIED FIBER OPTIC
- E = ELECTRICAL
- = BURIED ELECTRICAL
- = CHAINLINK FENCE
- = WIRE FENCE
- = WOOD FENCE
- PW = PROP WATER MAIN
- WS = PROP WATER SERVICE
- SS = PROP SANITARY SERVICE
- STS = PROP STORM SERVICE
- R/W = RIGHT OF WAY
- X = UTILITY REMOVAL

GENERAL NOTES:

CITY OF SOUTH HAVEN SPECIFICATIONS SHALL PREVAIL, UNLESS INDICATED OTHERWISE. WHERE CITY SPECIFICATION DO NOT EXIST, MDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION, 2012 EDITION SHALL PREVAIL.

THREE WORKING DAYS PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL REQUEST THE LOCATIONS OF ALL UTILITIES BY CALLING MISS DIG.

A MINIMUM OF 18'' VERTICAL CLEARANCE IS REQUIRED WHERE:
A. WATER MAIN AND SANITARY SEWER CROSS
B. WATER MAIN AND STORM SEWER CROSS
C. STORM AND SANITARY SEWER CROSS
UNLESS OTHERWISE SPECIFIED.

A MINIMUM OF 10' HORIZONTAL SEPARATION SHALL BE MAINTAINED WHERE WATER MAINS AND SEWERS RUN PARALLEL.

ALL TRENCH AND BEDDING SPECIFIED SHALL BE PER MDOT STANDARD PLAN R–83–SERIES, DETAIL B1,B2 OR G.

ANY EXCESS/UNSUITABLE MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND THEY SHALL BE RESPONSIBLE FOR THE PROPER DISPOSAL OF THIS MATERIAL.

DEWATERING, IF REQUIRED, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND NO EXTRA PAYMENT SHALL BE MADE THEREFORE.

THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH ''AS–RECORDED'' DRAWINGS OF THE SEWERS UPON COMPLETION OF THE PROJECT.

THE ENGINEER SHALL PROVIDE CONSTRUCTION STAKING AS DEFINED IN THE SPECIFICATIONS.

WHEN LOWERING OF ROADWAY RESULTS IN INSUFFICIENT COVER (LESS THAN 5') OVER EXISTING WATER MAIN, INSULATION SHALL BE UTILIZED AS DIRECTED BY THE ENGINEER. PAYMENT SHALL BE INCLUDED WITH UTILITY CONSTRUCTION.

TREES NOT DESIGNATED FOR REMOVAL SHALL BE PROTECTED BY THE CONTRACTOR. DAMAGED TREES SHALL BE RESTORED TO THE ORIGINAL CONDITION AT THE CONTRACTORS EXPENSE. ALL TREES DAMAGED BEYOND SAVING AS DETERMINED BY THE ENGINEER SHALL BE REMOVED AND REPLACED WITH A NURSERY GROWN TREE AS SPECIFIED BY THE ENGINEER.

REMOVAL OF ABANDONED CONFLICTING UTILITIES SHALL BE CONSIDERED INCLUDED WITH THE ITEM BEING CONSTRUCTED, INCLUDING BULKHEADING ALL PIPES 12'' DIA. OR LESS (PIPES IN EXCESS OF 12'' DIA. SHALL BE PAID FOR AS A SEWER BULKHEAD, ___ INCH).

PAY ITEM ''UTILITY STR. REM., (TYPE)'' SHALL INCLUDE REMOVAL OF MANHOLES FOR ANY TYPE OF UTILITY.

FITTINGS, PIPE EXTENSIONS AND APPURTENANCES NECESSARY TO CONNECT EXISTING PIPES TO PROPOSED MANHOLES, SHALL BE INCLUDED IN THE UNIT PRICE FOR THE PROPOSED STRUCTURE.

PIPES DESIGNATED FOR REMOVAL MAY BE FILLED WITH FLOWABLE FILL AND REMAIN IN PLACE, IF APPROVED BY THE ENGINEER.

WHERE CONCRETE SIDEWALK IS ADJACENT TO THE BACK OF CURB, A 1/2'' EXPANSION JOINT SHALL BE PLACED BETWEEN THE CURB AND SIDEWALK. PAYMENT IS INCLUDED IN CONCRETE SIDEWALK.

CONCRETE WALKS, STEPS, ETC. REQUIRING REPLACEMENT SHALL BE PAID AS CONCRETE SIDEWALK.

SANITARY SEWER:

THE CONTRACTOR SHALL GIVE 48 HOURS NOTICE TO THE CITY TO REQUEST A WATER SERVICE SHUTOFF OR SEWER TAP. THE CITY SHALL DETERMINE THE TIME & DURATION OF THE SHUTOFF.

DRAINAGE STRUCTURE AND SANITARY MANHOLE COVERS SHALL BE PAID AS STRUCTURE COVER (TYPE). MANHOLE CASTINGS SHALL DENOTE STORM SEWER, SANITARY SEWER OR WATER.

SANITARY LATERAL CONNECTIONS TO EXISTING OR ABANDONED SEWERS SHALL BE LOCATED BY THE CONTRACTOR AND CONNECTED TO THE SEWER AS DIRECTED BY THE ENGINEER. ANY LATERALS NOT SCHEDULED FOR REPLACEMENT OR RECONNECTION, DAMAGED BY THE CONTRACTORS OPERATIONS SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

INTERIOR DROP CONNECTION SHALL BE UTILIZED WHEN DIFFERENCE BETWEEN SANITARY SEWER INVERTS IS 2' OR GREATER. THE ABOVE WORK WILL BE PAID BY THE EACH AS ''STRUCTURE INSIDE DROP''.

PROPOSED STORM AND SANITARY MANHOLES SHALL BE 4 FEET IN DIAMETER UNLESS NOTED OTHERWISE.

SANITARY SERVICE CLEANOUTS SHALL BE INSTALLED WHERE NEW SERVICE LINES MEET EXISTING SERVICES AND AT BENDS/ GRADE CHANGES AS DIRECTED BY THE ENGINEER.

WHERE NEW SEWER IS TO REPLACE EXISTING SEWER IN THE SAME TRENCH REMOVAL OF EXISTING SEWER SHALL BE INCLUDED AS PART OF NEW SEWER ITEM.

SANITARY SEWER PIPE AND FITTINGS SHALL BE PVC SDR 35 FOR PIPES BURIED 0'–12', AND SDR 26 FOR PIPES BURIED OVER 12' DEEP.

WATER MAIN:

ALL WATER MAINS AND SERVICES SHALL HAVE A MINIMUM OF 5' OF COVER.

WATER MAIN SHALL NOT BE PLACED INTO SERVICE UNTIL THE APPROPRIATE TESTING AND DISINFECTION IS COMPLETE AND APPROVED BY THE CITY.

THE CONTRACTOR SHALL GIVE 48 HOURS NOTICE TO THE CITY TO REQUEST A WATER SERVICE SHUTOFF OR SEWER TAP. THE CITY SHALL DETERMINE THE TIME & DURATION OF THE SHUTOFF.

NO EXISTING VALVE SHALL BE CLOSED WITHOUT CITY APPROVAL.

ABANDONING OF EXISTING WATER MAIN AND REMOVAL OF EXISTING HYDRANTS/ APPURTENANCES SHALL BE INCLUDED WITH NEW WATER MAIN ITEM. ABANDONING WATER MAIN SHALL INCLUDE REMOVAL OF EXISTING PIPE, BULKHEADING ENDS OF PIPE OR FILLING PIPE WITH FLOWABLE FILL.

REMOVAL OF ALL WATER MAIN APPURTENANCES (HYDRANTS, VALVE BOXES, ETC.) ATTACHED TO REMOVED OR ABANDONED WATER MAIN SHALL BE REMOVED TO A MINIMUM DEPTH OF 3' BELOW GRADE. PAYMENT SHALL BE INCLUDED WITH THE WATER MAIN REMOVAL ITEM OF WORK.

STORM SEWER:

DRAINAGE STRUCTURE AND SANITARY MANHOLE COVERS SHALL BE PAID AS STRUCTURE COVER (TYPE). MANHOLE CASTINGS SHALL HAVE STORM SEWER, SANITARY SEWER OR WATER CAST ON STRUCTURE COVER AS APPLICABLE.

PROPOSED STORM AND SANITARY MANHOLES SHALL BE 4 FEET IN DIAMETER UNLESS NOTED OTHERWISE.

WHERE NEW SEWER IS TO REPLACE EXISTING SEWER IN THE SAME TRENCH REMOVAL OF EXISTING SEWER SHALL BE INCLUDED AS PART OF NEW SEWER ITEM.

STORM SEWER SERVICE LATERALS SHALL BE CORED INTO THE SIDE OF THE PROPOSED STORM SEWER. CONNECTION SHALL BE GROUTED OR BOOTED TO PROVIDE WATER TIGHT CONNECTION. PAYMENT INCLUDED IN STM. SEWER SERVICE, 6 INCH PAY ITEM.

ROADWAY:

BACKFILL MATERIAL WITHIN THE ZONE OF INFLUENCE OF A ROADWAY SHALL BE CLASS II SAND COMPACTED TO A MINIMUM OF 95% OF MAXIMUM DRY DENSITY IN 12'' MAXIMUM LIFTS.

DRIVEWAY OPENINGS SHALL BE MDOT TYPE L OR M PER STANDARD PLAN R–29–I.

PAVEMENT DESIGNATED FOR REMOVAL SHALL BE SAWCUT FULL DEPTH AT REMOVAL LIMITS PRIOR TO REMOVAL.

Item Description	Unit	Sht 3 Quantity
Mobilization, Max. $200,000	LS	1

NO.	REVISION DESCRIPTION:	BY:	DATE:

ABONMARCHE
Confidence By Design
Engineering
Architecture
Land Surveying
Marina/Waterfront
Construction Management
Landscape Architecture
Development Services
Manistee, MI
Grand Haven, MI
South Bend, IN
Portage, IN
PO West Main Street
P.O. Box 307 Muskegon, MI 49223
T 269.927.0100
F 269.927.1017

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PROJECT:
NORTH SHORE DRIVE
RECONSTRUCTION PROJECT
CITY OF SOUTH HAVEN
VAN BUREN COUNTY, MI

SHEET TITLE:
DETAILS, LEGEND AND NOTES

DRAWN BY: SCR
DESIGNED BY: CAK/SPJ/LT
PM REVIEW: TRD
QA/QC REVIEW:
DATE: MAY 2016
SEAL:

SIGNATURE:
DATE:

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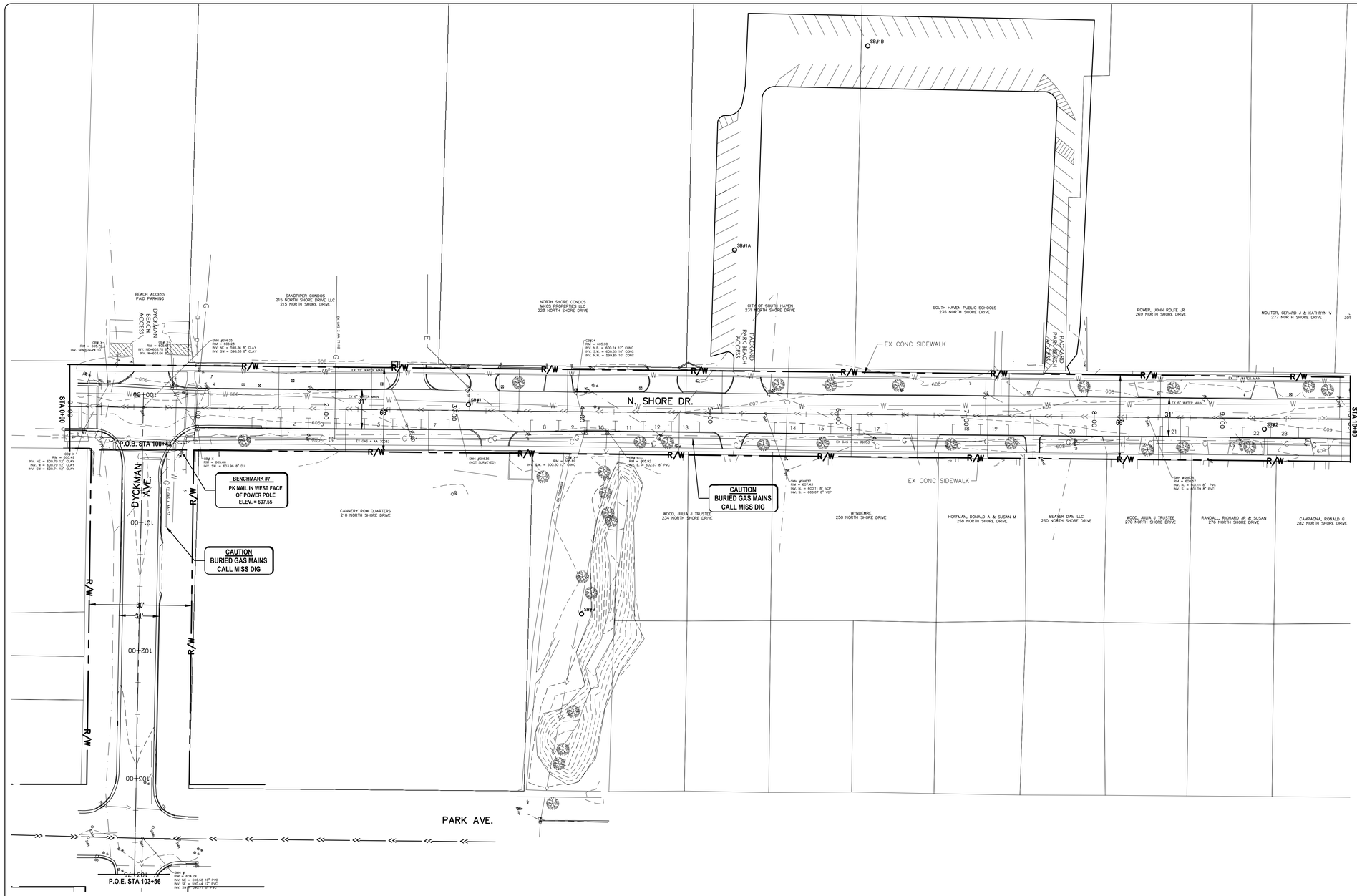
SCALE:
HORZ: N/A
VERT: N/A

ACI JOB #
14-0890

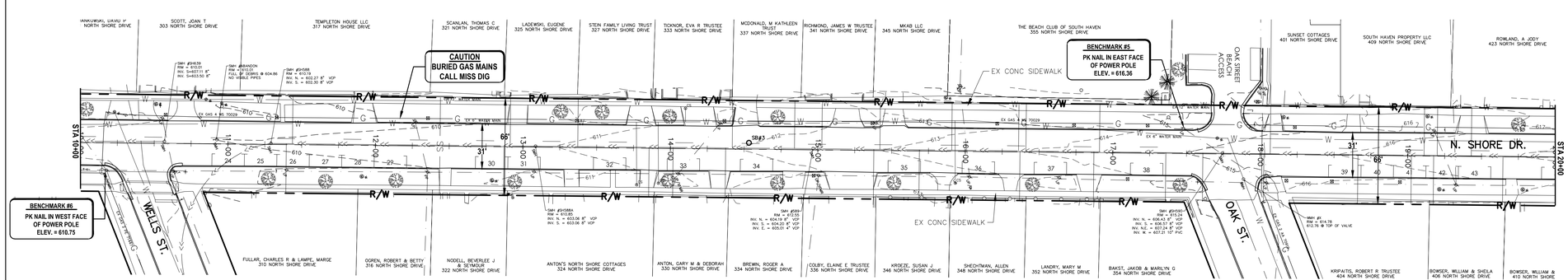
SHEET NO.
3 of 51

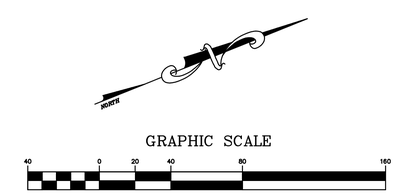
E:\CIVIL 3D ENG_2014\14-0890 NORTH SHORE DRIVE\Dwg\14-0890 D1.dwg, 5/6/2016 1:56:12 PM, anthony, 1:1



SOIL BORING INFORMATION

CORE NO.	LOCATION	DEPTH (FT)	MATERIAL
SB–1 NO GROUNDWATER	NORTH SHORE STA. 3+12 4' LEFT OF CENTERLINE	0 – 0.38	ASPHALT
		0.383 – 15	FINE SAND, OCCASIONAL CLAYEY SAND, BROWN TO LIGHT BROWN @ 6' MOIST, LOOSE TO MEDIUM DENSE
SB–1A	NORTH SHORE STA. 5+18 128' LEFT OF CENTERLINE	0 – 0.09	ASPHALT
		0.09 – 0.34	GRAVEL
		0.34+	FINE SAND
SB–1B	NORTH SHORE STA. 6+20 288' LEFT OF CENTERLINE	0 – 0.34	ASPHALT
		0.34+	FINE SAND
SB–2 GROUNDWATER AT 8.0 FEET	NORTH SHORE STA. 9+33 8' RIGHT OF CENTERLINE	0 – 0.395	ASPHALT
		0.395 – 8.0	FINE SAND, LIGHT BROWN, MOIST TO MEDIUM DENSE
		8.0 – 11.0	LEAN CLAY, GRAY, STIFF
		11.0 – 15.0	LEAN CLAY, FREQUENT SILT SEAMS, GRAY, STIFF
SB–3 GROUNDWATER AT 12.0 FEET	NORTH SHORE STA. 14+53 4' LEFT OF CENTERLINE	0 – 0.437	ASPHALT
		0.437 – 9.5	FINE SAND, BROWN, MOIST TO WET MEDIUM DENSE TO LOOSE
		9.5 – 11.0	LEAN CLAY, GRAY, VERY SOFT
		1.00 – 15.0	LEAN CLAY, FREQUENT SILT SEAMS AND PARTINGS, GRAY, MEDIUM
SB–4 GROUNDWATER AT 9.0 FEET	NORTH SHORE STA. 20+40 4' RIGHT OF CENTERLINE	0 – 0.395	ASPHALT
		0.395 – 2.3	FILL, FINE SILTY SAND, DARK BROWN, MOIST
		2.3 – 8.0	FINE SAND, LIGHT BROWN, MOIST LOOSE
		8.0 – 13.0	FINE SAND, OCCASIONAL CLAY LAYERS, GRAD, WET, LOOSE
		13.0 – 15.0	LEAN CLAY, OCCASIONAL SILT PARTINGS, GRAY, VERY STIFF
SB–5 GROUNDWATER AT 12.0 FEET	NORTH SHORE STA. 26+22 10' LEFT OF CENTERLINE	0.0 – 0.125	ASPHALT
		0.125 – 0.666	PORTLAND CEMENT
		0.666 – 6.0	FILL FINE SAND W/SILT, BROWN, MOIST, LOOSE
		6.0 – 9.0	FINE SAND, OCCASIONAL SILTY SAND LAYERS, GRAY, MOIST TO WET, LOOSE
		9.0 – 15.0	LEAN CLAY, OCCASIONAL SILT SEAMS AND PARTINGS, GRAY, STIFF TO HARD
SB–9 NO GROUNDWATER	NORTH SHORE STA. 4+00 150' RIGHT OF CENTERLINE	0.0 – .333	TOP SOIL
		0.333 – 1.3	FILL, FINE SAND, BROWN, MOIST
		1.3 – 1.8	DETERIORATED ASPHALT PAVEMENT
		1.8 – 13.6	FINE SAND, LIGHT BROWN, MOIST, LOOSE TO VERY LOOSE
		13.6 – 15.0	FINE SAND WITH SILT, LIGHT BROWN, MOIST, MEDIUM DENSE





NO.	REVISION DESCRIPTION:	BY:	DATE:

ABONMARCHE
Confidence By Design
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South Bend, IN
Portage, IN
75 West Main Street
Plymouth, Michigan 48170
T 269.927.2295
F 269.927.1017

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PROJECT:

NORTH SHORE DRIVE RECONSTRUCTION PROJECT CITY OF SOUTH HAVEN VAN BUREN COUNTY, MI

SHEET TITLE:

NORTH SHORE DRIVE EXISTING CONDITIONS STA. 0+00 TO 20+00

DRAWN BY: DJL/SCR
DESIGNED BY: CAK/SPJ/LT
PM REVIEW: TRD
QA/QC REVIEW:
DATE: MAY 2016
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DATE:

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SCALE:
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VERT: 1"=5'

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SHEET NO.
4 of 51

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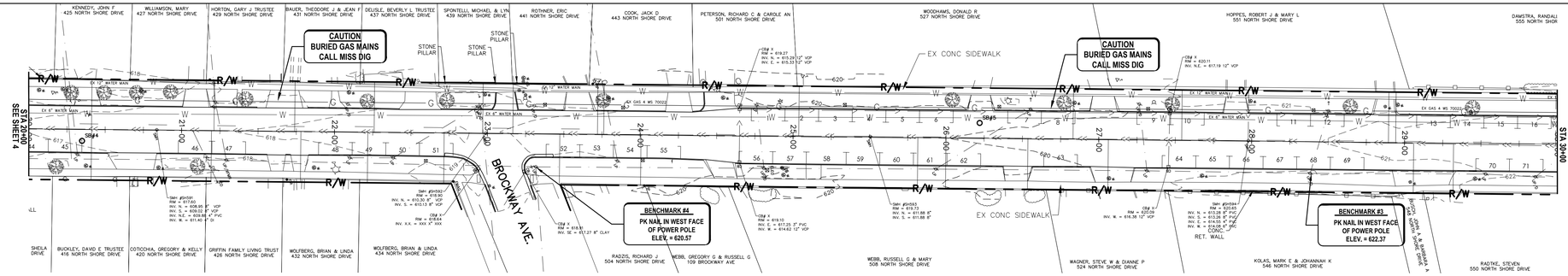

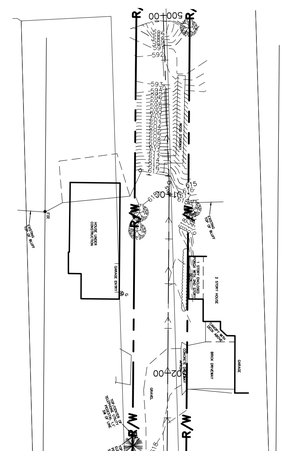

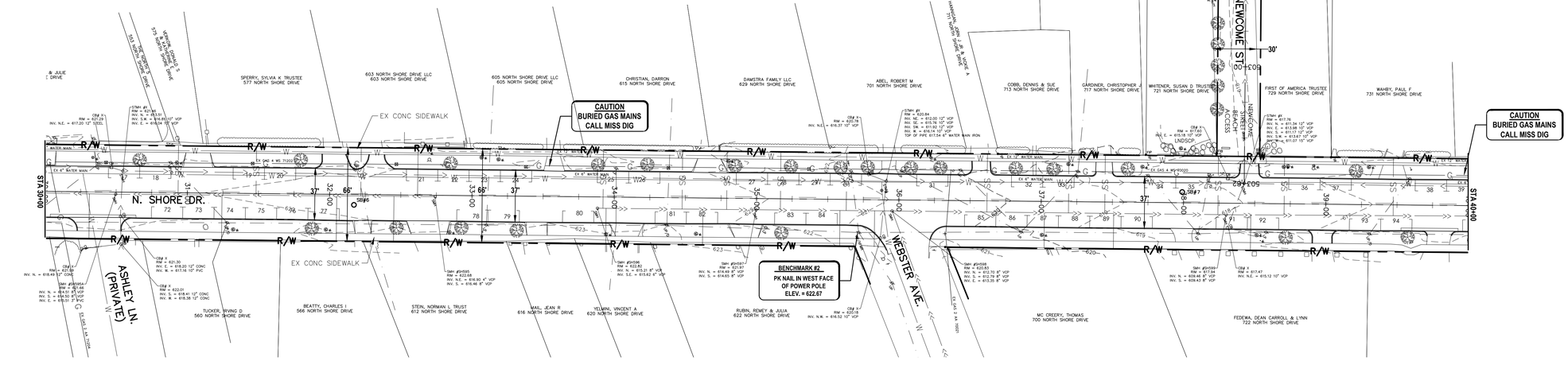

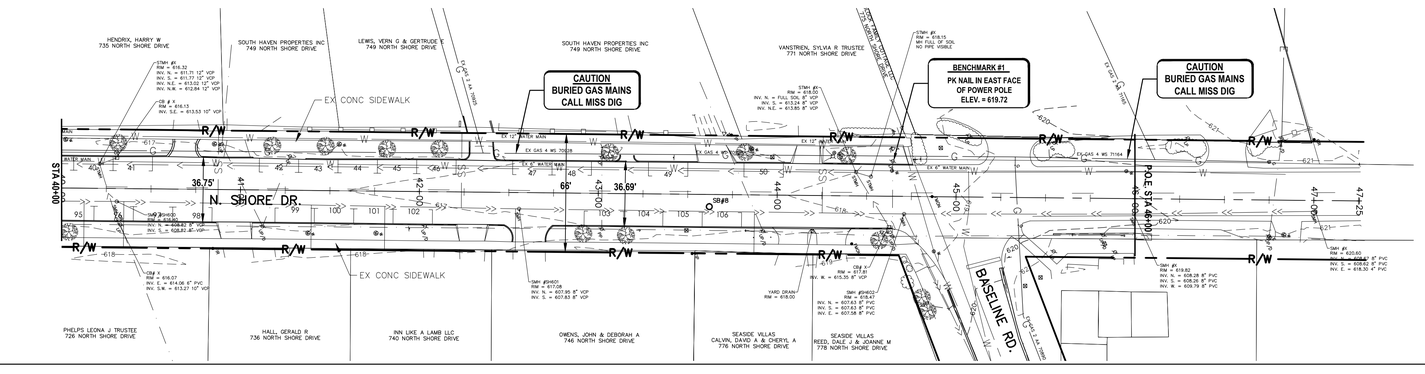

SOIL BORING INFORMATION

CORE NO.	LOCATION	DEPTH (FT)	MATERIAL
SB-6 GROUNDWATER AT 8.0 FEET	NORTH SHORE STA. 32+17 7' RIGHT OF CENTERLINE	0 – 0.125	ASPHALT
		0.125 – 0.6875	PORTLAND CEMENT
		0.6875 – 3.0	FILL, FINE SAND, W/SILT, BROWN, MOIST, LOOSE
		3.0 – 8.0	FINE SAND, BROWN, MOIST, LOOSE
		8.0 – 15.0	FINE SAND, BROWN & GRAYISH BROWN, WET, MEDIUM DENSE
SB-7 NO GROUNDWATER	NORTH SHORE STA. 37+99 7' LEFT OF CENTERLINE	0.0 – 0.104	ASPHALT
		0.104 – 0.645	PORTLAND CEMENT
		0.645 – 3.0	FINE SAND, BROWN, MOIST, VERY LOOSE
		3.0 – 4.7	LEAN CLAY, OCCASIONAL FINE SAND AND SILT SEAMS AND PARTINGS, GRAY & BROWN, GRAY, VERY SOFT TO STIFF
		4.7 – 13.0	FINE SAND, OCCASIONAL SILTY SAND LAYERS, BROWN, MOIST, LOOSE
		13.0 – 15.0	FINE CLAYEY SAND, OCCASIONAL CLAYEY SILT LAYERS, BROWN GRAY, MOIST, LOOSE
SB-8 NO GROUNDWATER	NORTH SHORE STA. 43+62 7' RIGHT OF CENTERLINE	0.0 – 0.104	ASPHALT
		0.104 – 0.645	PORTLAND CEMENT
		0.645 – 4.5	FILL, FINE SILTY SAND, FREQUENT CLAY LAYERS, DARK BROWN, MOIST, LOOSE
		4.5 – 15.0	FINE SAND, OCCASIONAL CLAY PARTINGS, LIGHT BROWN, MOIST, VERY LOOSE TO MEDIUM DENSE

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

NO.	REVISION DESCRIPTION:	BY:	DATE:

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Architecture
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Marina/Waterfront
Construction Management
Landscape Architecture
Development Services

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Confidence By Design

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Kalamazoo, MI
South Bend, IN
Portage, IN

25 West Main Street
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F 269.927.1017

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PROJECT:

NORTH SHORE DRIVE
RECONSTRUCTION PROJECT
CITY OF SOUTH HAVEN
VAN BUREN COUNTY, MI

SHEET TITLE:

NORTH SHORE DRIVE
EXISTING CONDITIONS
STA. 20+00 TO 46+00

DRAWN BY: DJL/SCR

DESIGNED BY: CAK/SPJ/LT

PM REVIEW: TRD

QA/QC REVIEW:

DATE: MAY 2016

SEAL:

SIGNATURE:

DATE:

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VERT: 1"=5'

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14-0890

SHEET NO.
5 of 51

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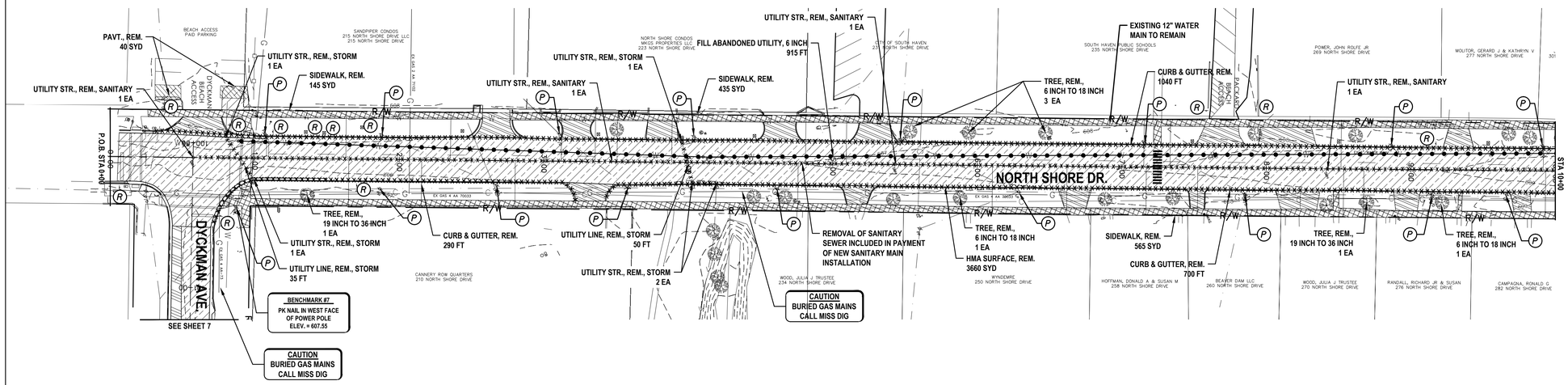

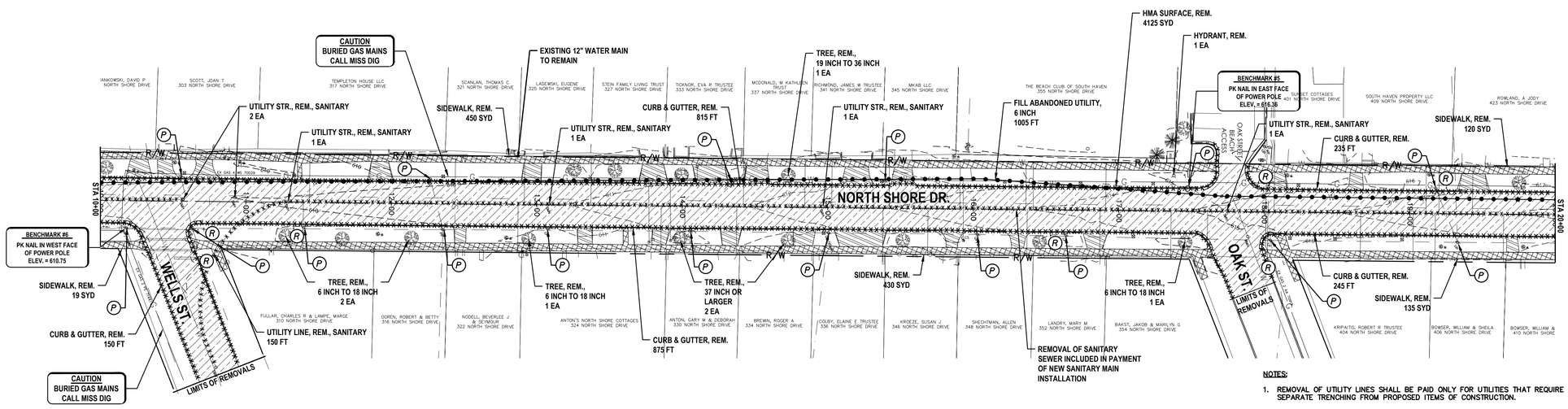

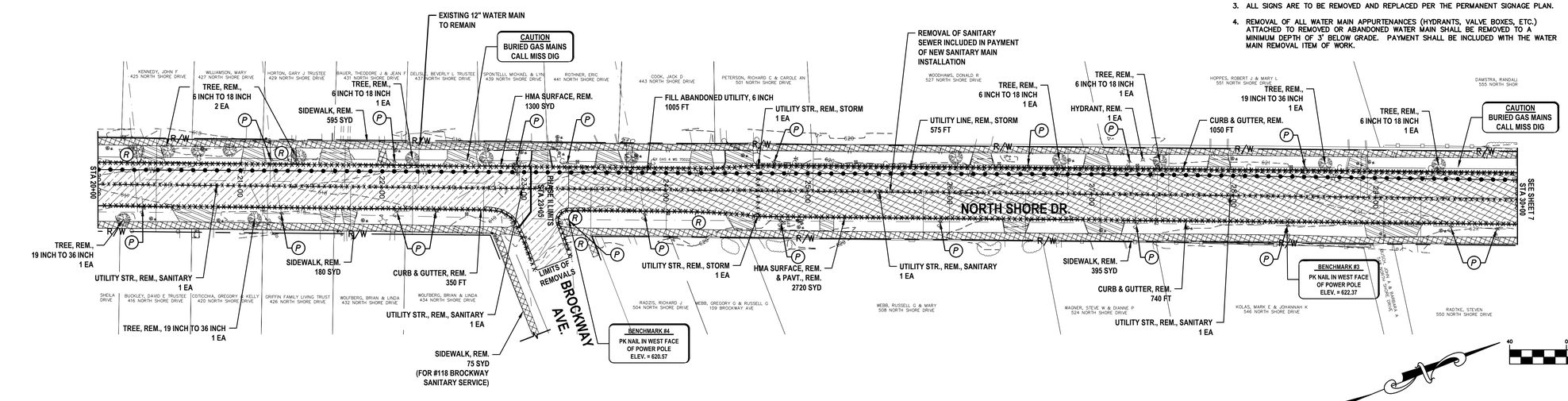

Item Description	Unit	Sht 6 Quantity
Tree, Rem., 6 inch to 18 inch	Ea	15
Tree, Rem., 19 inch to 36 inch	Ea	6
Tree, Rem., 37 inch or Larger	Ea	1
HMA Surface, Rem.	Syd	11902
Pavt., Rem.	Syd	4054
Sidewalk, Rem.	Syd	3545
Curb & Gutter, Rem.	Ft	6490
Utility Line, Rem., Sanitary	Ft	150
Utility Line, Rem., Storm	Ft	660
Utility Str., Rem., Sanitary	Ea	14
Utility Str., Rem., Storm	Ea	7
Sign, Rem.	Ea	24
Fill Abandoned Utility, 6 inch	Ft	2925

LEGEND

- SIDEWALK, REM.
- COLD MILLING
- DRIVEWAY REMOVAL (SEE TABLE FOR PAYMENT PER DRIVE)
- HMA SURFACE, REM.
- PAVT., REM.
- CURB & GUTTER, REM.
- UTILITY LINE, REM.
- FILL ABANDONED UTILITY
- (R) SIGN, REM.
- (P) POWER POLE (RELOCATED BY OTHERS)

DRIVEWAY REMOVALS		
STATION	HMA SURFACE, REM. (SYD)	PAVT., REM. (SYD)
0+60 L	0	42
2+67 L	32	0
3+24 L	0	30
3+25 R	0	34
3+83 L	0	31
4+62 L	0	34
5+15 R	0	26
5+28 R	0	37
6+68 R	0	30
7+50 R	0	16
7+69 L	0	41
8+09 L	0	55
8+19 R	41	0
8+98 R	0	25
9+33 L	0	27
9+74 R	0	20
10+26 L	0	23
10+46 L	0	17
10+74 L	0	22
11+92 L	0	23
12+46 R	0	11
12+98 L	0	20
13+31 R	0	14
13+81 L	0	27
13+85 R	0	15
14+21 L	0	33
14+32 R	0	18
14+53 L	0	22
14+84 R	0	19
15+21 L	14	28
15+53 L	0	18
15+81 R	0	15
16+31 R	0	14
16+84 R	0	18
18+09 L	0	16
18+63 L	0	13
19+45 L	0	27
19+69 R	10	0
20+40 L	0	20
20+66 R	0	35
21+10 L	0	22
21+62 R	0	12
21+67 L	0	28
21+75 R	0	12
22+59 L	0	29
23+11 L	0	18
23+61 L	0	25
24+24 L	0	23
24+52 L	0	26
24+52 R	0	22
26+24 L	0	18
24+67 R	0	19
27+05 L	0	20
27+05 R	0	30
27+90 L	0	18
28+88 L	0	15
29+10 R	0	41
TOTAL	97	1294

* ALL PRIMARY SIDEWALKS AND RAMP REMOVALS QUANTIFIED VIA NOTES. (THIS SHEET)

NOTES:

1. REMOVAL OF UTILITY LINES SHALL BE PAID ONLY FOR UTILITIES THAT REQUIRE SEPARATE TRENCHING FROM PROPOSED ITEMS OF CONSTRUCTION.
2. DRIVEWAY REMOVALS SHALL BE PAID FOR BY TYPE OF MATERIAL REMOVED. SEE DRIVEWAY TABLE FOR DETAILS.
3. ALL SIGNS ARE TO BE REMOVED AND REPLACED PER THE PERMANENT SIGNAGE PLAN.
4. REMOVAL OF ALL WATER MAIN APPURTENANCES (HYDRANTS, VALVE BOXES, ETC.) ATTACHED TO REMOVED OR ABANDONED WATER MAIN SHALL BE REMOVED TO A MINIMUM DEPTH OF 3' BELOW GRADE. PAYMENT SHALL BE INCLUDED WITH THE WATER MAIN REMOVAL ITEM OF WORK.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

NO.	REVISION DESCRIPTION:	BY:	DATE:

ABONMARCHE
Confidence By Design
Engineering Architecture Land Development Marina/Waterfront Construction Management Landscape Architecture Development Services
Manistee, MI Traverse City, MI South Bend, IN Portage, IN
25 West Main Street Lansing, MICHIGAN 48933 P 269.927.2295 F 269.927.1017

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PROJECT:
NORTH SHORE DRIVE RECONSTRUCTION PROJECT
CITY OF SOUTH HAVEN
VAN BUREN COUNTY, MI

SHEET TITLE:
NORTH SHORE DRIVE REMOVALS PLAN STA. 0+00 TO 30+00

DRAWN BY: GNF
DESIGNED BY: CAK/SPJ/LT
PM REVIEW: TRD
QA/QC REVIEW:
DATE: MAY 2016
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VERT: N/A

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14-0890

SHEET NO.

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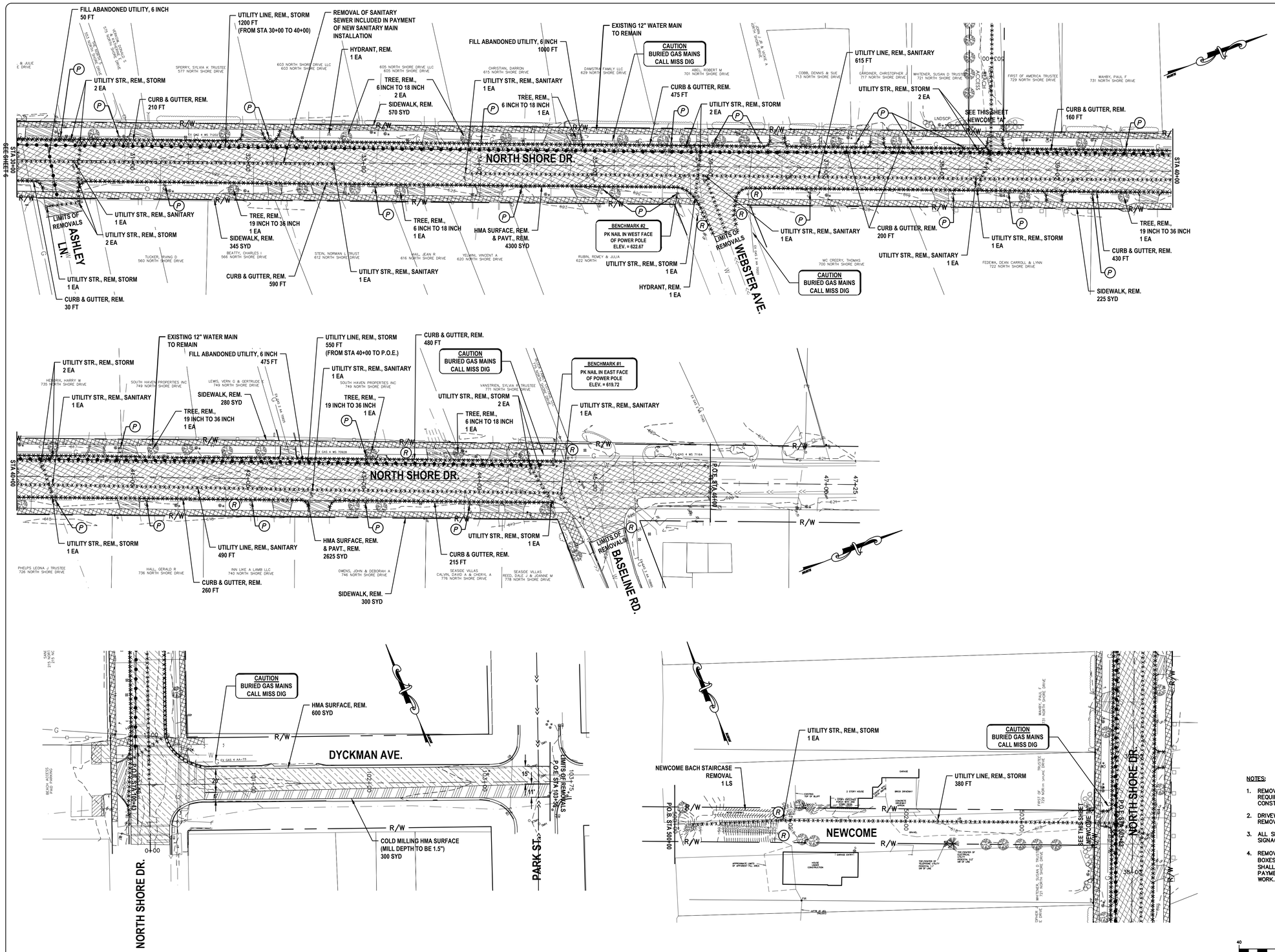

Item Description	Unit	Sht 7 Quantity
Tree, Rem., 6 inch to 18 inch	Ea	5
Tree, Rem., 19 inch to 36 inch	Ea	4
HMA Surface, Rem.	Syd	7565
Pavt., Rem.	Syd	7465
Sidewalk, Rem.	Syd	1720
Curb & Gutter, Rem.	Ft	3050
Utility Line, Rem., Sanitary	Ft	1160
Utility Line, Rem., Storm	Ft	2130
Utility Str., Rem., Sanitary	Ea	9
Utility Str., Rem., Storm	Ea	18
Sign, Rem.	Ea	9
Newcome Beach Staircase Removal	LS	1
Fill Abandoned Utility, 6 inch	Ft	1525
Cold Milling HMA Surface	Syd	310

LEGEND

- SIDEWALK, REM.
- COLD MILLING
- DRIVEWAY REMOVAL (SEE TABLE FOR PAYMENT PER DRIVE)
- HMA SURFACE, REM.
- PAVT., REM.
- CURB & GUTTER, REM.
- UTILITY LINE, REM.
- FILL ABANDONED UTILITY
- (R) SIGN, REM.
- (P) POWER POLE (RELOCATED BY OTHERS)

DRIVEWAY REMOVALS

STATION	HMA SURFACE REM. (SYD)	PAVT REM. (SYD)
30+23 L	0	33
30+34 R	0	36
31+08 L	0	23
32+07 L	0	23
32+21 R	13	0
32+34 L	0	17
32+65 R	0	30
33+45 R	0	16
33+58 L	0	14
34+10 R	0	23
34+67 L	0	23
34+92 R	0	23
35+96 L	0	11
36+59 L	0	15
37+46 L	0	14
37+95 R	0	14
38+48 L	0	16
38+95 R	0	15
39+48 L	0	19
39+76 R	0	19
40+67 L	0	15
40+92 L	0	14
40+92 R	0	20
42+29 R	0	17
42+32 L	0	16
42+62 R	0	22
43+69 L	23	0
44+09 R	0	17
44+18 L	0	17
44+31 R	0	18
TOTAL	36	540

* ALL PRIMARY SIDEWALKS AND RAMP REMOVALS QUANTIFIED VIA NOTES. (THIS SHEET)

NOTES:

1. REMOVAL OF UTILITY LINES SHALL BE PAID ONLY FOR UTILITIES THAT REQUIRE SEPARATE TRENCHING FROM PROPOSED ITEMS OF CONSTRUCTION.
2. DRIVEWAY REMOVALS SHALL BE PAID FOR BY TYPE OF MATERIAL REMOVED. SEE DRIVEWAY TABLE FOR DETAILS.
3. ALL SIGNS ARE TO BE REMOVED AND REPLACED PER THE PERMANENT SIGNAGE PLAN.
4. REMOVAL OF ALL WATER MAIN APPURTENANCES (HYDRANTS, VALVE BOXES, ETC.) ATTACHED TO REMOVED OR ABANDONED WATER MAIN SHALL BE REMOVED TO A MINIMUM DEPTH OF 3' BELOW GRADE. PAYMENT SHALL BE INCLUDED WITH THE WATER MAIN REMOVAL ITEM OF WORK.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

NO.	REVISION DESCRIPTION:	BY:	DATE:

ABONMARCHE
Confidence By Design
Engineering Architecture Land Development Marina/Waterfront Construction Management Landscape Architecture Development Services
Manistee, MI
Kalamazoo, MI
South Bend, IN
Portage, IN
PO West Main Street
Kalamazoo, MI 49023
T 269.927.1017
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PROJECT:
NORTH SHORE DRIVE RECONSTRUCTION PROJECT
CITY OF SOUTH HAVEN
VAN BUREN COUNTY, MI

SHEET TITLE:
REMOVAL PLANS
NORTH SHORE STA 30+00 TO 46+00
DYCKMAN STA 100+00 TO 103+75
NEWCOME STA 500+00 TO 503+75

DRAWN BY: GNF
DESIGNED BY: CAK/SPJ/LT
PM REVIEW: TRD
QA/QC REVIEW:
DATE: MAY 2016
SEAL:
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VERT: N/A

ACI JOB #
14-0890

SHEET NO.

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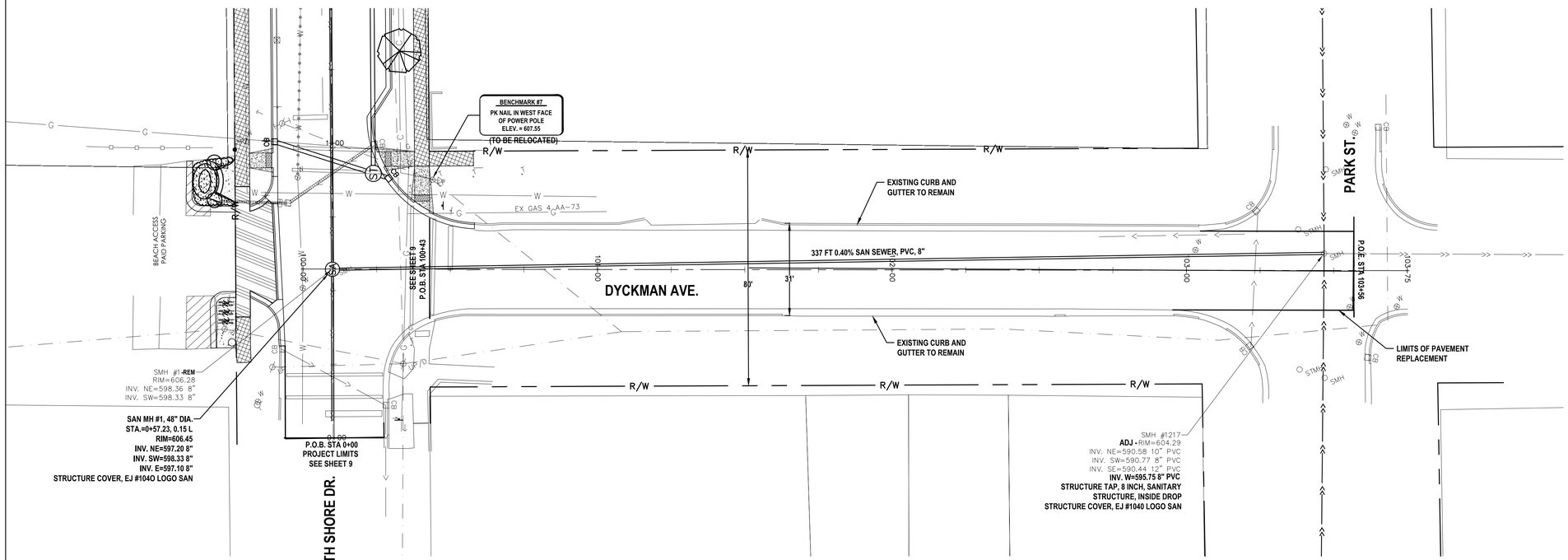
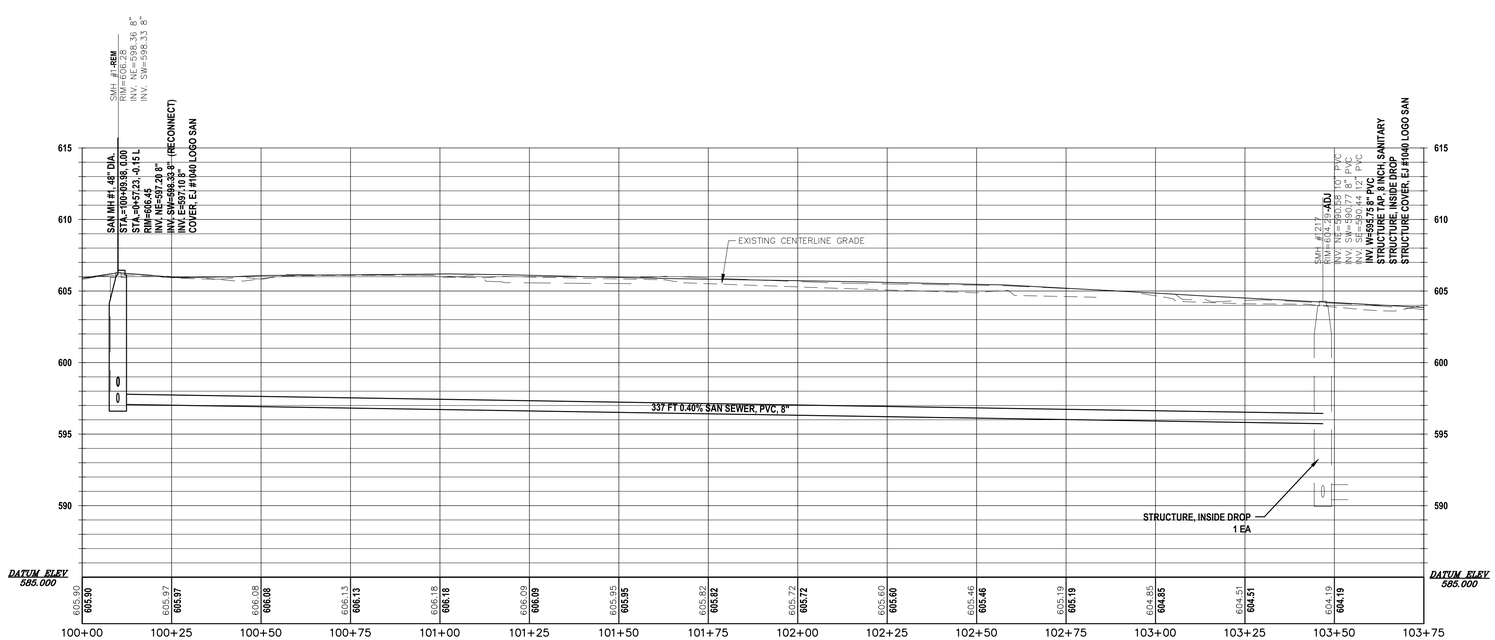
Item Description	Unit	Sht 8 Quantity
Roadway Grading	Sta	3.25
Subgrade Undercutting, Type, II	Cyd	50
Structure Cover, Adjust, Case 2	Ea	1
Subbase, CIP	Cyd	270
Aggregate Base, 21AA, 8 inch	Syd	800
HMA, 4E3	Ton	135
HMA, 5E3	Ton	75
Structure, Conn. to Ex. Sewer, 48 inch	Ea	1
Structure Cover, EJ #1040 Logo San	Ea	2
Structure Cover, EJ #7045	Ea	2
Structure Tap, 8 inch, Sanitary	Ea	1
Structure, Inside Drop	Ea	1
San. Sewer, PVC SDR 26, 8 inch	Ft	340



HATCH LEGEND

- DRIVEWAY, NONREINF. CONC., 6 INCH
- SIDEWALK, 4 INCH
- SIDEWALK RAMP, 6 INCH
- DETECTABLE WARNING SURFACE, CAST IRON



GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

NO.	REVISION DESCRIPTION:	BY:	DATE:

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PROJECT:

NORTH SHORE DRIVE
RECONSTRUCTION PROJECT
CITY OF SOUTH HAVEN
VAN BUREN COUNTY, MI

SHEET TITLE:

DYCKMAN AVE
ROAD WORK AN SANITARY SEWER
PLAN AND PROFILE
STA. 100+00 TO 103+75

DRAWN BY: SCR
DESIGNED BY: CAK/SPJ/LT
PM REVIEW: TRD
QA/QC REVIEW:
DATE: MAY 2016
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VERT: 1"=5'

ACI JOB #
14-0890

SHEET NO.

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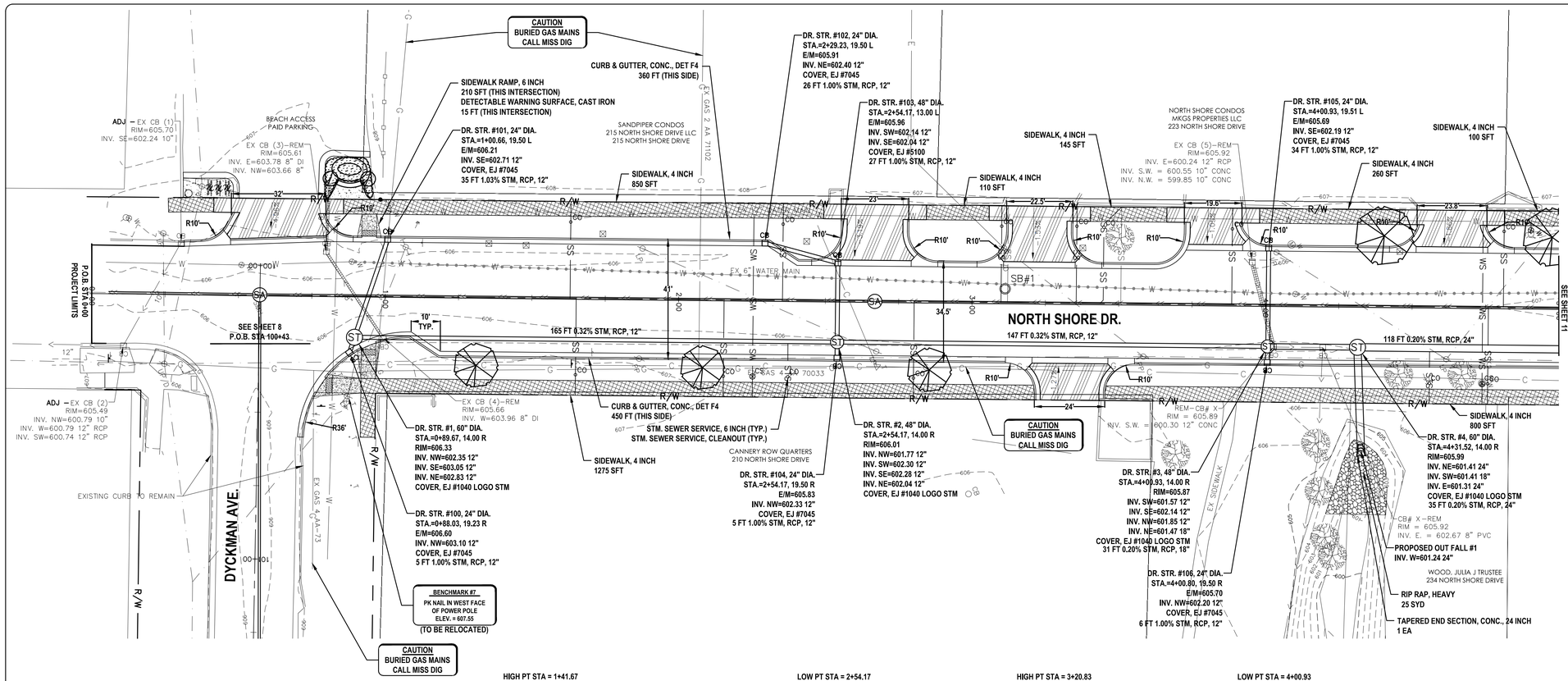

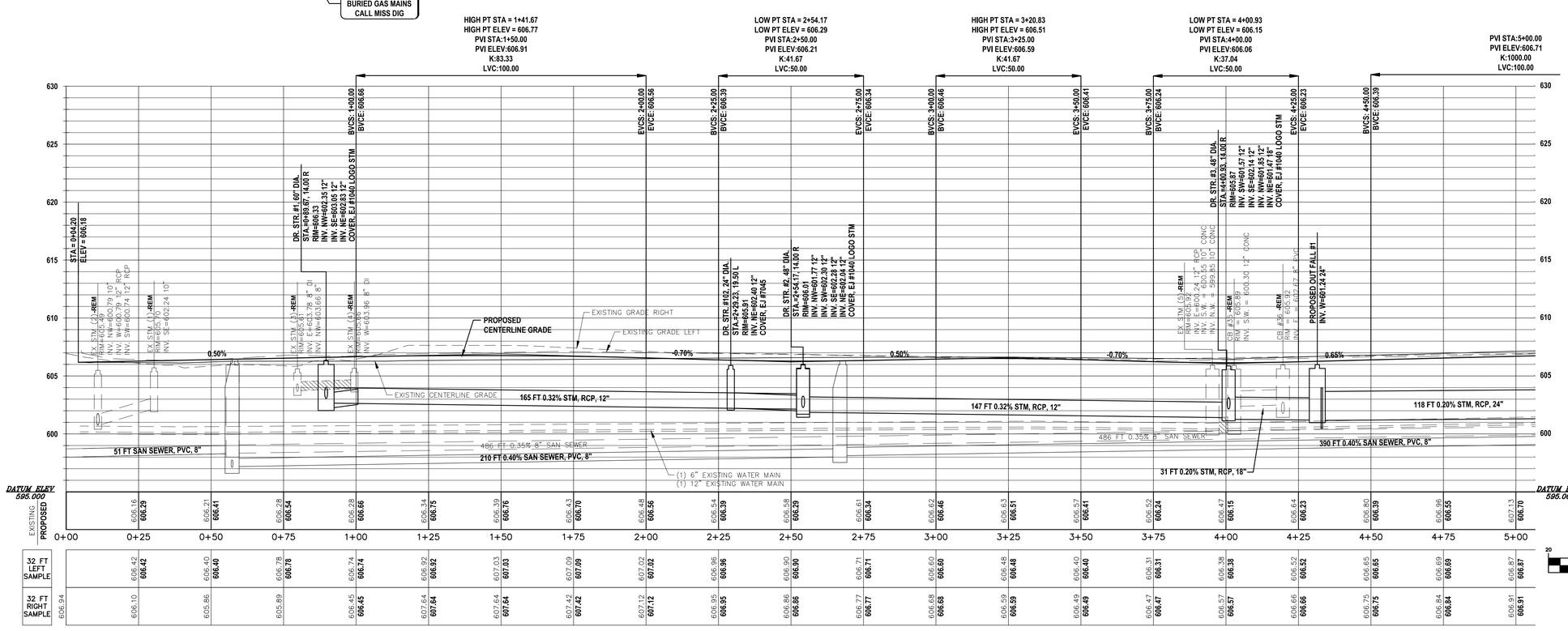

Road Work and Storm Sewer Item Description	Unit	Sht 9 Quantity
Roadway Grading	Sta	5.00
Subgrade Undercutting, Type, II	Cyd	50
Rip Rap, Heavy	Cyd	25
Structure Cover, Adjust, Case 2	Ea	2
Subbase, CIP	Cyd	810
Aggregate Base, 21AA, 8 inch	Syd	2420
HMA, 4E3	Ton	470
HMA, 5E3	Ton	175
Sidewalk, 4 inch	Sft	3540
Sidewalk Ramp, 6 inch	Sft	210
Detectable Warning Surface, Cast Iron	Ft	15
Curb & Gutter, Conc., Det F4	Ft	810
Driveway Opening, Conc., Det M	Ft	265
Driveway, Nonreinf. Conc., 6 inch	Syd	265
Structure, Stm. MH, 48 inch Dia.	Ea	2
Structure, Stm. MH, 60 inch Dia.	Ea	2
Structure, Stm. CB, 24 inch Dia.	Ea	6
Structure, Stm. CB, 48 inch Dia.	Ea	1
Structure Cover, EJ #1040 Logo Stm	Ea	4
Structure Cover, EJ #5100	Ea	1
Structure Cover, EJ #7045	Ea	6
Stm. Sewer, RCP, 12 inch	Ft	450
Stm. Sewer, RCP, 18 inch	Ft	31
Stm. Sewer, RCP, 24 inch	Ft	100
Tapered End Section, Conc., 24 inch	Ea	1
Stm. Sewer Service, 6 inch	Ft	36
Stm. Sewer Service, Cleanout	Ea	2
Underdrain, Subbase, 6 inch	Ft	1000

HATCH LEGEND

- DRIVEWAY, NONREINF. CONC., 6 INCH
- SIDEWALK, 4 INCH
- SIDEWALK RAMP, 6 INCH
- PROFILE STRUCTURE & PIPE REMOVALS
- DETECTABLE WARNING SURFACE, CAST IRON
- PLAN SEWER REMOVALS
- FILL ABANDONED UTILITY
- HAND PATCHING

ESTIMATED DRIVEWAY QUANTITIES THIS SHEET	
STATION	DRIVEWAY, NONREINF. CONC., 6 INCH (SYD)
0+60 L	55
2+67 L	55
3+24 L	52
3+25 R	32
3+83 L	32
4+62 L	39

GRAPHIC SCALE

(IN FEET)
1 inch = 20 ft.

SCALE:
HORZ: 1" = 20'
VERT: 1" = 5'

ACI JOB #
14-0890

SHEET NO.
9 of 51

NO.	REVISION DESCRIPTION:	BY:	DATE:

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DATE:

SEAL:

DRAWN BY: GNF
DESIGNED BY: CAK/SPJ/LT
PM REVIEW: TRD
QA/QC REVIEW:
DATE: MAY 2016

SHEET TITLE:
NORTH SHORE DRIVE
ROAD WORK AND STORM SEWER
PLAN AND PROFILE
STA. 0+00 TO 5+00

PROJECT:
NORTH SHORE DRIVE
RECONSTRUCTION PROJECT
CITY OF SOUTH HAVEN
VAN BUREN COUNTY, MI

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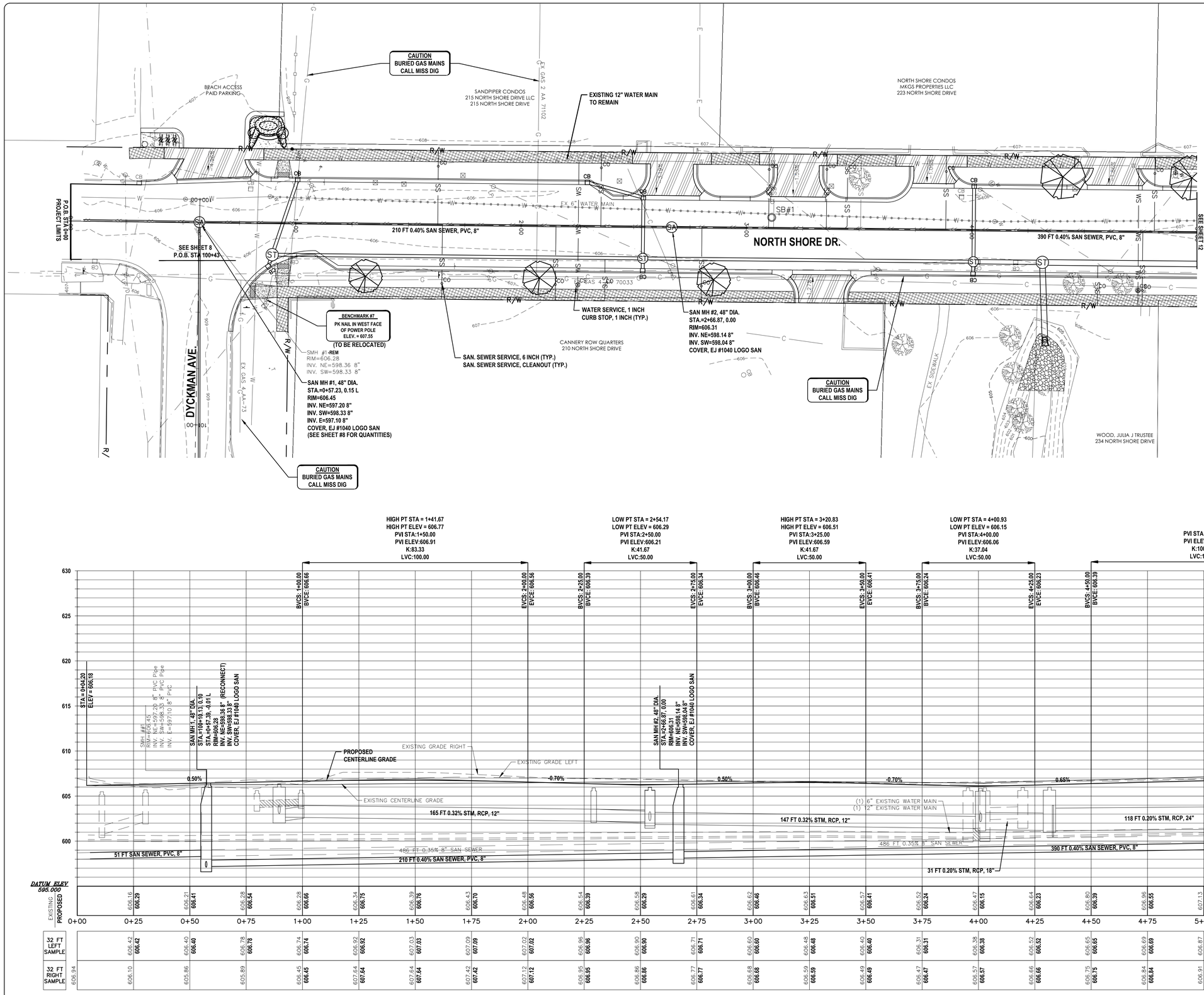
Water and Sanitary Sewer Item Description	Unit	Sht 10 Quantity
Structure, San. MH, 48 inch Dia.	Ea	1
Structure Cover, EJ #1040 Logo San	Ea	1
Water Service, 1 inch	Ft	125
Curb Stop, 1 inch	Ea	2
San. Sewer, PVC SDR 26, 8 inch	Ft	495
San. Sewer Service, 6 inch	Ft	370
San. Sewer Service, Cleanout	Ea	11



HATCH LEGEND

- DRIVEWAY, NONREINF. CONC., 6 INCH
- SIDEWALK, 4 INCH
- SIDEWALK RAMP, 6 INCH
- PROFILE STRUCTURE & PIPE REMOVALS
- DETECTABLE WARNING SURFACE, CAST IRON
- PLAN SEWER REMOVALS
- FILL ABANDONED UTILITY
- HAND PATCHING

NORTH

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

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PROJECT:
NORTH SHORE DRIVE
RECONSTRUCTION PROJECT
CITY OF SOUTH HAVEN
VAN BUREN COUNTY, MI

SHEET TITLE:
NORTH SHORE DRIVE
WATER AND SANITARY SEWER
PLAN AND PROFILE
STA 0+00 TO 5+00

DRAWN BY: SPJ/SCR
DESIGNED BY: CAK/SPJ/LT
PM REVIEW: TRD
QA/QC REVIEW:
DATE: MAY 2016
SEAL:
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DATE:

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HORZ: HORZ
VERT: VERT

ACI JOB #
14-0890

SHEET NO.
10 of 51

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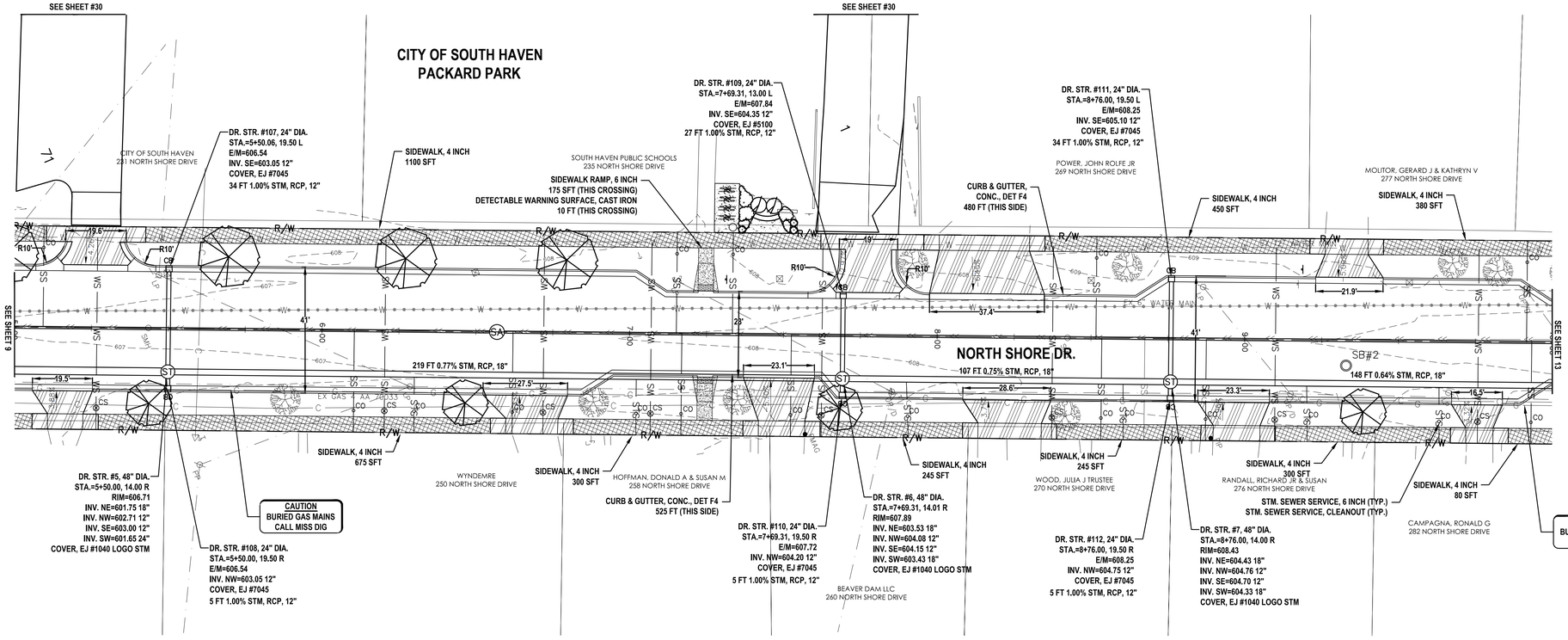
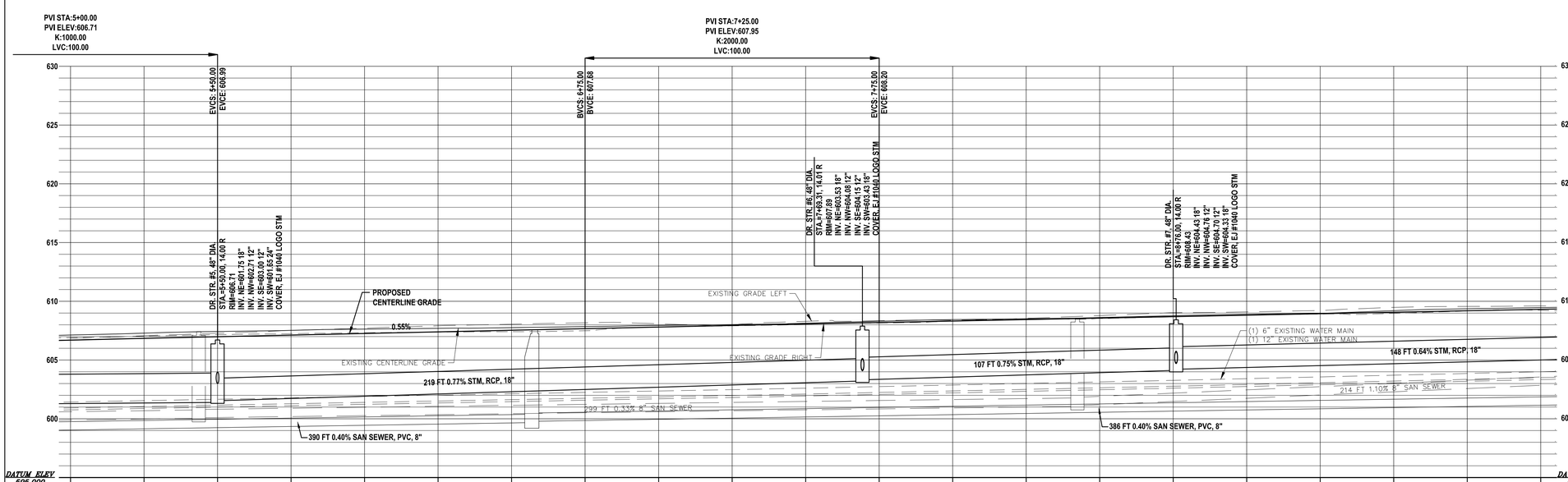


Road Work and Storm Sewer Item Description	Unit	Sht 11 Quantity
Roadway Grading	Sta	5.00
Subgrade Undercutting, Type, II	Cyd	50
Subbase, CIP	Cyd	925
Aggregate Base, 21AA, 8 inch	Syd	2770
HMA, 4E3	Ton	440
HMA, 5E3	Ton	165
Sidewalk, 4 inch	Sft	3775
Sidewalk Ramp, 6 inch	Sft	175
Detectable Warning Surface, Cast Iron	Ft	10
Curb & Gutter, Conc., Det F4	Ft	1005
Driveway Opening, Conc., Det M	Ft	80
Driveway, Nonreinf. Conc., 6 inch	Syd	380
Structure, Stm. MH, 48 inch Dia.	Ea	3
Structure, Stm. CB, 24 inch Dia.	Ea	6
Structure Cover, EJ #1040 Logo Stm	Ea	3
Structure Cover, EJ #5100	Ea	1
Structure Cover, EJ #7045	Ea	5
Stm. Sewer, RCP, 12 inch	Ft	110
Stm. Sewer, RCP, 18 inch	Ft	450
Stm. Sewer, RCP, 24 inch	Ft	50
Stm. Sewer Service, 6 inch	Ft	120
Stm. Sewer Service, Cleanout	Ea	6
Underdrain, Subbase, 6 inch	Ft	1000

HATCH LEGEND

- DRIVEWAY, NONREINF. CONC., 6 INCH
- SIDEWALK, 4 INCH
- SIDEWALK RAMP, 6 INCH
- PROFILE STRUCTURE & PIPE REMOVALS
- DETECTABLE WARNING SURFACE, CAST IRON
- PLAN SEWER REMOVALS
- FILL ABANDONED UTILITY
- HAND PATCHING

ESTIMATED DRIVEWAY QUANTITIES THIS SHEET	
STATION	DRIVEWAY, NONREINF. CONC., 6 INCH (SYD)
5+15 R	25
5+28 L	35
6+68 R	35
7+50 R	45
7+69 L	45
8+09 L	75
8+19 R	38
8+98 R	30
9+33 L	29
9+74 R	23



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PROPOSED	606.70	606.85	606.99	607.13	607.26	607.40	607.54	607.68	607.81	607.94	608.07	608.20	608.33	608.45	608.58	608.70	608.83	608.95	609.08	609.20	609.33
	5+00	5+25	5+50	5+75	6+00	6+25	6+50	6+75	7+00	7+25	7+50	7+75	8+00	8+25	8+50	8+75	9+00	9+25	9+50	9+75	10+00
32 FT LEFT SAMPLE	606.87	607.07	607.28	607.53	607.72	607.92	608.05	608.18	608.09	607.95	608.30	608.35	608.39	608.56	608.79	609.03	609.10	609.22	609.49	609.57	609.61
	606.87	607.07	607.28	607.53	607.72	607.92	608.05	608.18	608.09	607.95	608.30	608.35	608.39	608.56	608.79	609.03	609.10	609.22	609.49	609.57	609.61
32 FT RIGHT SAMPLE	606.91	607.04	607.16	607.25	607.33	607.38	607.42	607.50	607.81	607.91	608.05	608.16	608.32	608.44	608.54	608.68	608.83	608.91	608.97	609.18	609.24
	606.91	607.04	607.16	607.25	607.33	607.38	607.42	607.50	607.81	607.91	608.05	608.16	608.32	608.44	608.54	608.68	608.83	608.91	608.97	609.18	609.24

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

NO.	REVISION DESCRIPTION:	BY:	DATE:

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PROJECT:
NORTH SHORE DRIVE
RECONSTRUCTION PROJECT
CITY OF SOUTH HAVEN
VAN BUREN COUNTY, MI

SHEET TITLE:
NORTH SHORE DRIVE
ROAD WORK AND STORM SEWER
PLAN AND PROFILE
STA. 5+00 TO 10+00

DRAWN BY: SPJ/SCR
DESIGNED BY: CAK/SPJ/LT
PM REVIEW: TRD
QA/QC REVIEW:
DATE: MAY 2016
SEAL:
SIGNATURE:
DATE:

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SCALE:
HORZ: 1" = 20'
VERT: 1" = 5'

ACI JOB #
14-0890

SHEET NO.
11 of 51

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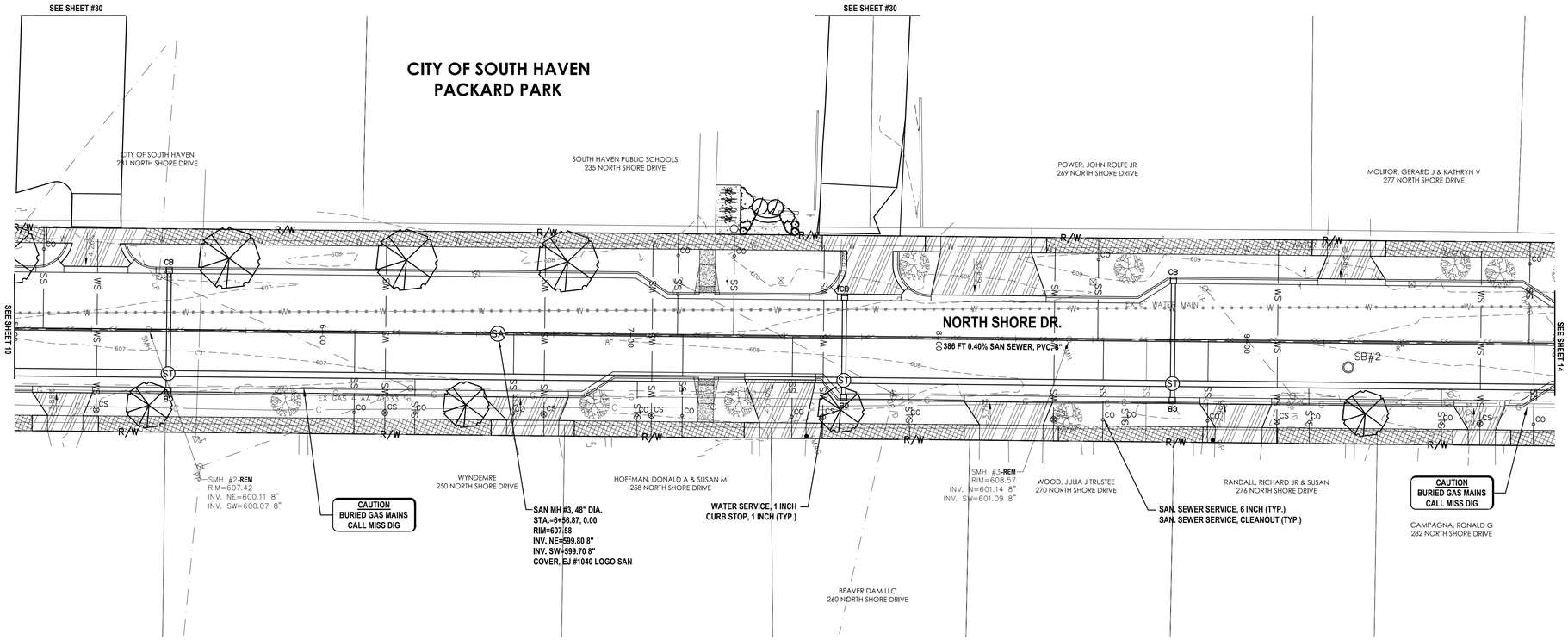
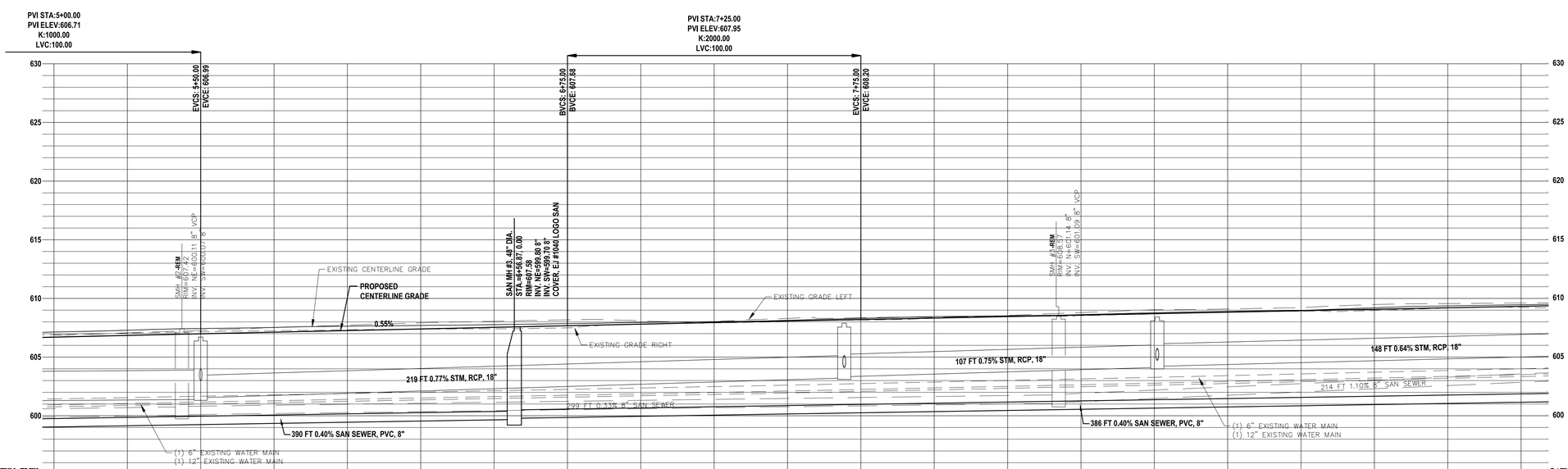
Water and Sanitary Sewer Item Description	Unit	Sht 12 Quantity
Structure, San. MH, 48 inch Dia.	Ea	1
Structure Cover, EJ #1040 Logo San	Ea	1
Water Service, 1 inch	Ft	515
Curb Stop, 1 inch	Ea	8
San. Sewer, PVC SDR 26, 8 inch	Ft	500
San. Sewer Service, 6 inch	Ft	400
San. Sewer Service, Cleanout	Ea	12
Cleanout Riser Cover	Ea	3



HATCH LEGEND

- DRIVEWAY, NONREINF. CONC., 6 INCH
- SIDEWALK, 4 INCH
- SIDEWALK RAMP, 6 INCH
- PROFILE STRUCTURE & PIPE REMOVALS
- DETECTABLE WARNING SURFACE, CAST IRON
- PLAN SEWER REMOVALS
- FILL ABANDONED UTILITY
- HAND PATCHING



	5+00	5+25	5+50	5+75	6+00	6+25	6+50	6+75	7+00	7+25	7+50	7+75	8+00	8+25	8+50	8+75	9+00	9+25	9+50	9+75	10+00
EXISTING	607.13	607.29	607.44	607.53	607.63	607.70	607.76	607.85	607.95	608.03	608.14	608.20	608.45	608.52	608.62	608.78	608.90	608.98	609.21	609.36	609.46
PROPOSED	606.70	606.85	606.99	607.13	607.26	607.40	607.54	607.68	607.81	607.94	608.07	608.20	608.33	608.45	608.59	608.70	608.83	608.95	609.08	609.20	609.33
32 FT LEFT SAMPLE	606.87	607.07	607.28	607.53	607.72	607.92	608.05	608.18	608.09	607.95	608.30	608.36	608.39	608.56	608.79	609.03	609.10	609.22	609.49	609.57	609.61
	606.87	607.07	607.28	607.53	607.72	607.92	608.05	608.18	608.09	607.95	608.30	608.36	608.39	608.56	608.79	609.03	609.10	609.22	609.49	609.57	609.61
32 FT RIGHT SAMPLE	606.91	607.04	607.16	607.25	607.33	607.38	607.42	607.50	607.81	607.91	608.05	608.16	608.32	608.44	608.54	608.68	608.83	608.91	608.97	609.18	609.24
	606.91	607.04	607.16	607.25	607.33	607.38	607.42	607.50	607.81	607.91	608.05	608.16	608.32	608.44	608.54	608.68	608.83	608.91	608.97	609.18	609.24

NORTH

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

NO.	REVISION DESCRIPTION:	BY:	DATE:

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PROJECT:
NORTH SHORE DRIVE
RECONSTRUCTION PROJECT
CITY OF SOUTH HAVEN
VAN BUREN COUNTY, MI

SHEET TITLE:
NORTH SHORE DRIVE
WATER AND SANITARY SEWER
PLAN AND PROFILE
STA. 5+00 TO 10+00

DRAWN BY: SPJ/SCR
DESIGNED BY: CAK/SPJ/LT
PM REVIEW: TRD
QA/QC REVIEW:
DATE: MAY 2016
SEAL:
SIGNATURE:
DATE:

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VERT: 1" = 5'

ACI JOB #
14-0890

SHEET NO.

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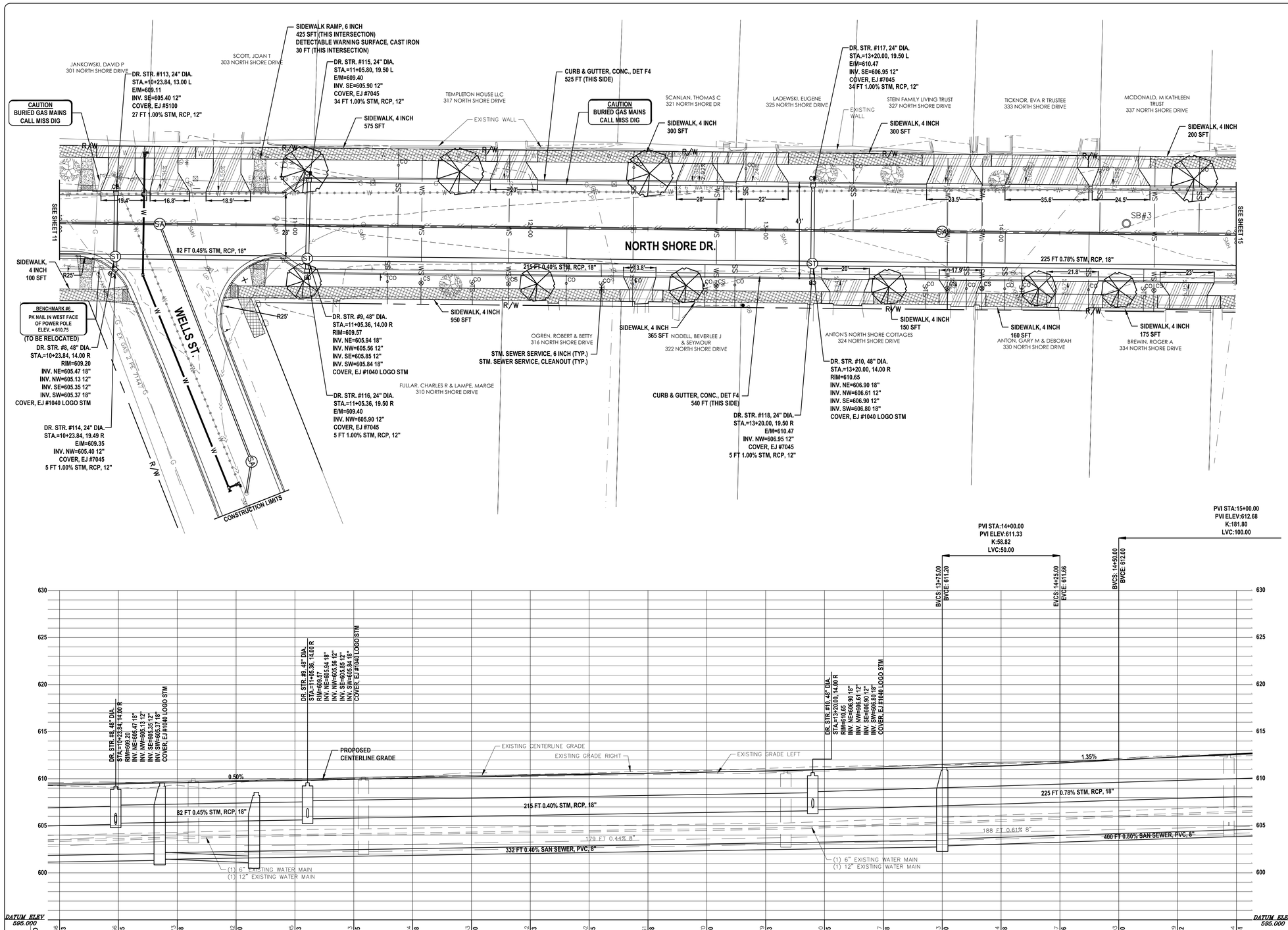

Road Work and Storm Sewer Item Description	Unit	Sht 13 Quantity
Roadway Grading	Sta	5.00
Subgrade Undercutting, Type, II	Cyd	50
Subbase, CIP	Cyd	890
Aggregate Base, 21AA, 8 inch	Syd	2650
HMA, 4E3	Ton	532
HMA, 5E3	Ton	260
Sidewalk, 4 inch	Sft	3275
Sidewalk Ramp, 6 inch	Sft	425
Detectable Warning Surface, Cast Iron	Ft	30
Curb & Gutter, Conc., Det F4	Ft	1180
Driveway, Nonreinf. Conc., 6 inch	Syd	410
Structure, Stm. MH, 48 inch Dia.	Ea	3
Structure, Stm. CB, 24 inch Dia.	Ea	6
Structure Cover, EJ #1040 Logo Stm	Ea	3
Structure Cover, EJ #5100	Ea	1
Structure Cover, EJ #7045	Ea	5
Stm. Sewer, RCP, 12 inch	Ft	110
Stm. Sewer, RCP, 18 inch	Ft	500
Stm. Sewer Service, 6 inch	Ft	120
Stm. Sewer Service, Cleanout	Ea	6
Underdrain, Subbase, 6 inch	Ft	1000

HATCH LEGEND

- DRIVEWAY, NONREINF. CONC., 6 INCH
- SIDEWALK, 4 INCH
- SIDEWALK RAMP, 6 INCH
- PROFILE STRUCTURE & PIPE REMOVALS
- DETECTABLE WARNING SURFACE, CAST IRON
- PLAN SEWER REMOVALS
- FILL ABANDONED UTILITY
- HAND PATCHING

ESTIMATED DRIVEWAY QUANTITIES THIS SHEET	
STATION	DRIVEWAY, NONREINF. CONC., 6 INCH (SYD)
10+26 L	33
10+46 L	31
10+74 L	35
11+92 L	26
12+46 R	18
12+72 L	27
12+98 L	30
13+31 R	25
13+81 L	33
13+85 R	22
14+21 L	50
14+32 R	20
14+53 L	33
14+84 R	27

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PROJECT:

NORTH SHORE DRIVE
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CITY OF SOUTH HAVEN
VAN BUREN COUNTY, MI

SHEET TITLE:

NORTH SHORE DRIVE
ROAD WORK AND STORM SEWER
PLAN AND PROFILE
STA. 10+00 TO 15+00

DRAWN BY: SPJ/SCR
DESIGNED BY: CAK/SPJ/LT
PM REVIEW: TRD
QA/QC REVIEW:
DATE: MAY 2016
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DATE:

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14-0890

SHEET NO.
13 of 51

NO.	REVISION DESCRIPTION:	BY:	DATE:

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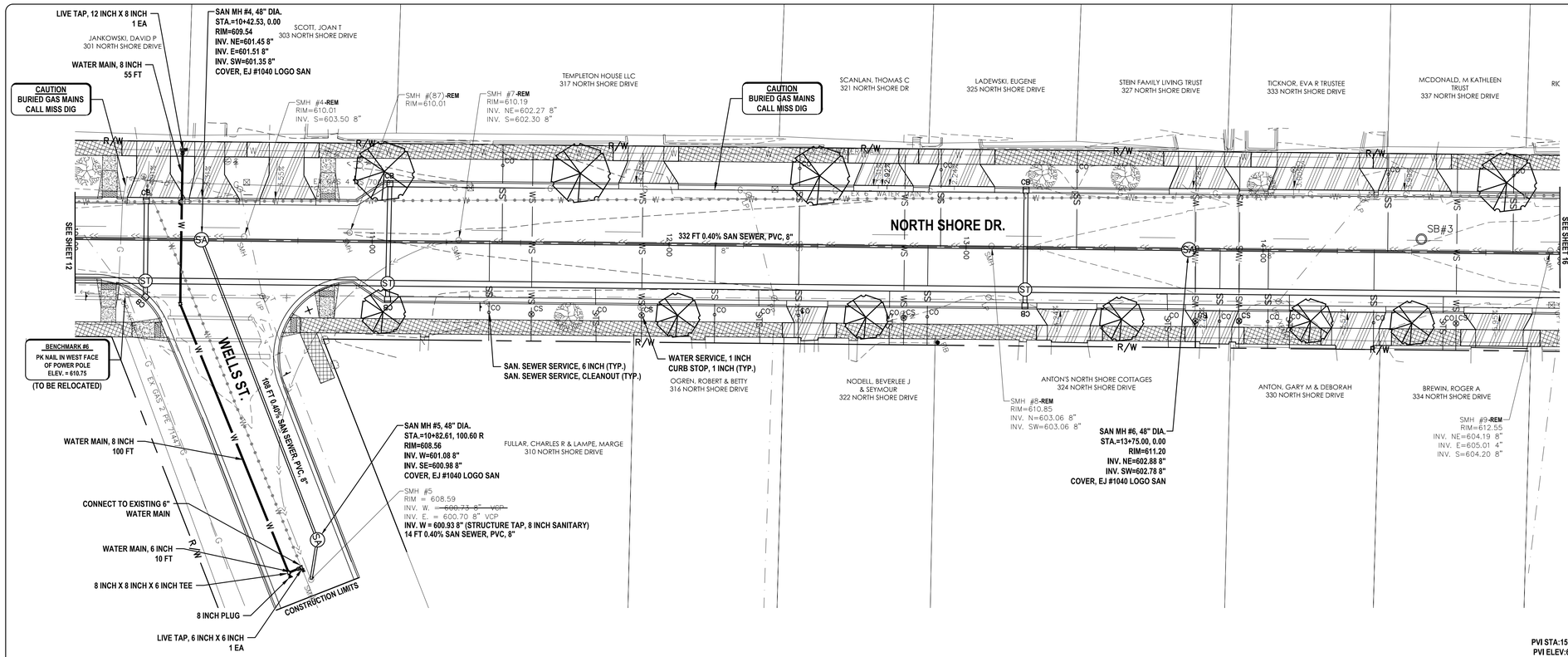
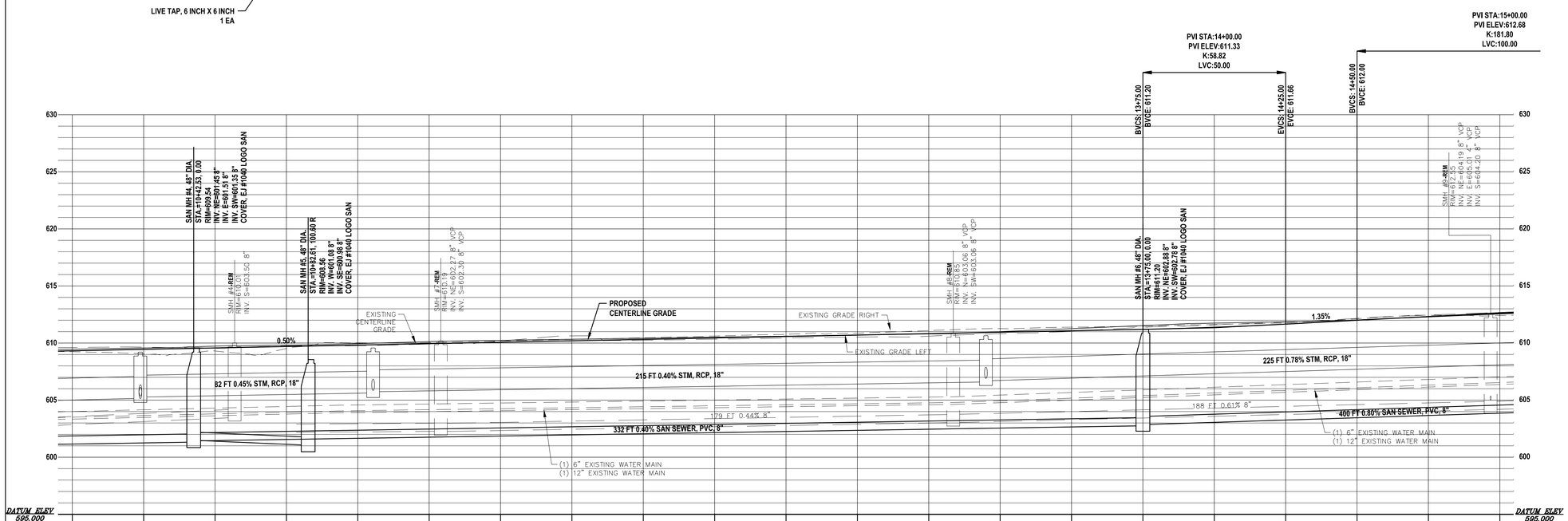


Water and Sanitary Sewer Item Description	Unit	Sht 14 Quantity
Structure, San. MH, 48 inch Dia.	Ea	3
Structure Cover, EJ #1040 Logo San	Ea	3
Structure Tap, 8 inch, Sanitary	Ea	1
Water main, 6 inch	Ft	15
Water main, 8 inch	Ft	155
Live Tap, 12 inch x 8 inch	Ea	1
Water Service, 1 inch	Ft	390
Curb Stop, 1 inch	Ea	6
San. Sewer, PVC SDR 26, 8 inch	Ft	630
San. Sewer Service, 6 inch	Ft	430
San. Sewer Service, Cleanout	Ea	13
Cleanout Riser Cover	Ea	4

HATCH LEGEND

- DRIVEWAY, NONREINF. CONC., 6 INCH
- SIDEWALK, 4 INCH
- SIDEWALK RAMP, 6 INCH
- PROFILE STRUCTURE & PIPE REMOVALS
- DETECTABLE WARNING SURFACE, CAST IRON
- PLAN SEWER REMOVALS
- FILL ABANDONED UTILITY
- HAND PATCHING



EXISTING	609.46	609.56	609.73	609.92	609.95	610.13	610.24	610.33	610.42	610.52	610.61	610.70	610.79	611.00	611.27	611.53	611.74	611.87	612.03	612.29	612.54
PROPOSED	609.33	609.45	609.58	609.70	609.83	609.95	610.08	610.20	610.33	610.45	610.58	610.70	610.83	610.95	611.08	611.20	611.38	611.66	612.00	612.32	612.61
32 FT LEFT SAMPLE	609.61	609.65	609.53	609.76	609.77	609.91	610.17	610.63	610.24	610.34	610.44	610.53	610.60	610.81	611.03	611.38	611.59	611.83	612.16	612.45	612.69
32 FT RIGHT SAMPLE	609.24	609.05	609.31	609.52	610.02	610.04	610.18	610.32	610.46	610.62	610.74	610.87	611.09	611.27	611.39	611.47	611.63	611.76	612.13	612.44	612.41

10+00	10+25	10+50	10+75	11+00	11+25	11+50	11+75	12+00	12+25	12+50	12+75	13+00	13+25	13+50	13+75	14+00	14+25	14+50	14+75	15+00
609.61	609.65	609.53	609.76	609.77	609.91	610.17	610.63	610.24	610.34	610.44	610.53	610.60	610.81	611.03	611.38	611.59	611.83	612.16	612.45	612.69
609.24	609.05	609.31	609.52	610.02	610.04	610.18	610.32	610.46	610.62	610.74	610.87	611.09	611.27	611.39	611.47	611.63	611.76	612.13	612.44	612.41

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

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PROJECT:
NORTH SHORE DRIVE
RECONSTRUCTION PROJECT
CITY OF SOUTH HAVEN
VAN BUREN COUNTY, MI

SHEET TITLE:
NORTH SHORE DRIVE
WATER AND SANITARY SEWER
PLAN AND PROFILE
STA. 10+00 TO 15+00

DRAWN BY: SPJ/SCR
DESIGNED BY: CAK/SPJ/LT
PM REVIEW: TRD
QA/QC REVIEW:
DATE: MAY 2016
SEAL:

SIGNATURE:
DATE:

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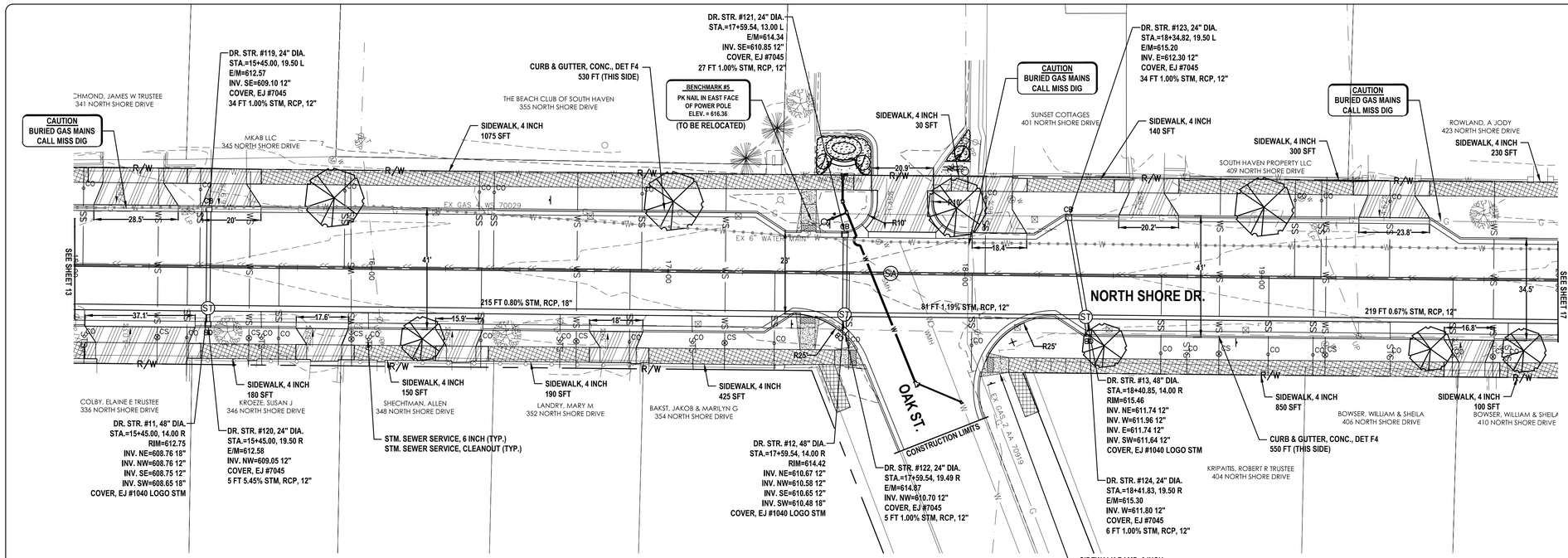
SCALE:
HORZ: 1" = 20'
VERT: 1" = 5'

ACI JOB #
14-0890

SHEET NO.
14 of 51

NO.	REVISION DESCRIPTION:	BY:	DATE:

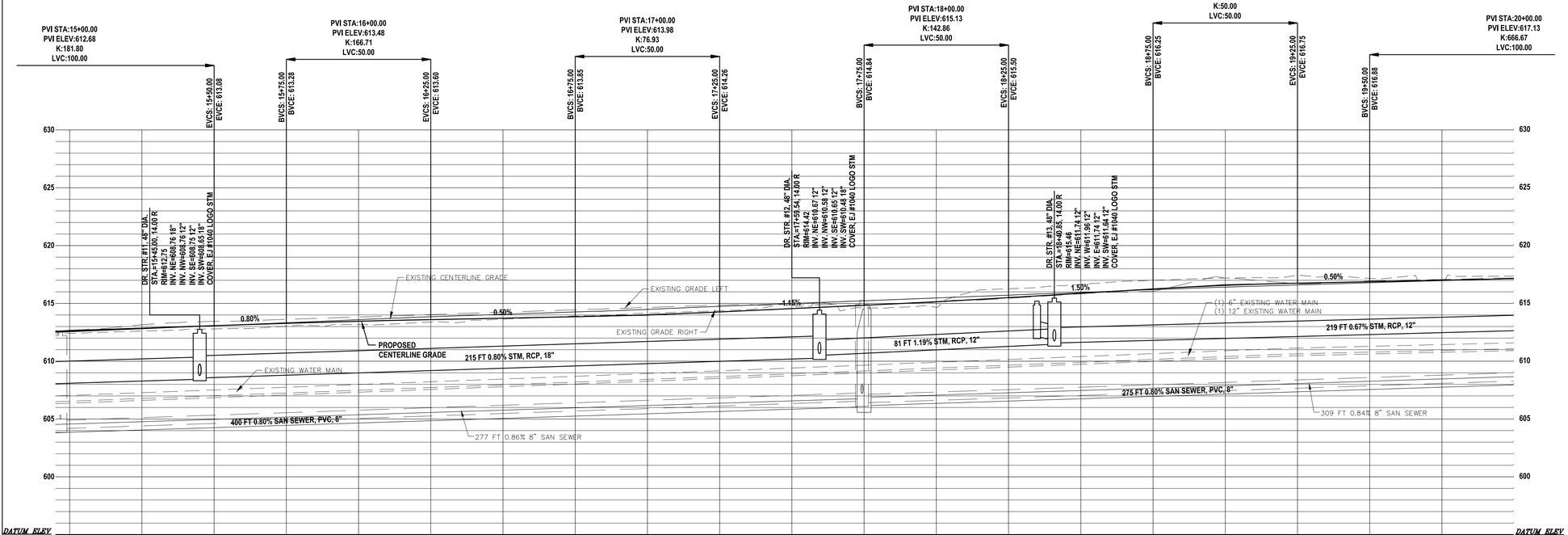


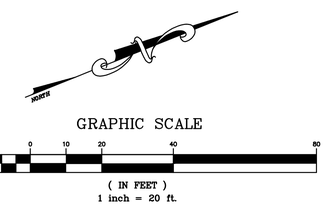
Road Work and Storm Sewer Item Description	Unit	Sht 15 Quantity
Roadway Grading	Sta	5.00
Subgrade Undercutting, Type, II	Cyd	50
Subbase, CIP	Cyd	815
Aggregate Base, 21AA, 8 inch	Syd	2445
HMA, 4E3	Ton	465
HMA, 5E3	Ton	200
Sidewalk, 4 inch	Sft	3670
Sidewalk Ramp, 6 inch	Sft	275
Detectable Warning Surface, Cast Iron	Ft	20
Curb & Gutter, Conc., Det F4	Ft	1080
Driveway Opening, Conc., Det M	Ft	45
Driveway, Nonreinf. Conc., 6 inch	Syd	340
Structure, Stm. MH, 48 inch Dia.	Ea	3
Structure, Stm. CB, 24 inch Dia.	Ea	6
Structure Cover, EJ #1040 Logo Stm	Ea	3
Structure Cover, EJ #5100	Ea	1
Structure Cover, EJ #7045	Ea	5
Stm. Sewer, RCP, 12 inch	Ft	350
Stm. Sewer, RCP, 18 inch	Ft	260
Stm. Sewer Service, 6 inch	Ft	150
Stm. Sewer Service, Cleanout	Ea	8
Underdrain, Subbase, 6 inch	Ft	1000

HATCH LEGEND

- DRIVEWAY, NONREINF. CONC., 6 INCH
- SIDEWALK, 4 INCH
- SIDEWALK RAMP, 6 INCH
- PROFILE STRUCTURE & PIPE REMOVALS
- DETECTABLE WARNING SURFACE, CAST IRON
- PLAN SEWER REMOVALS
- FILL ABANDONED UTILITY
- HAND PATCHING

ESTIMATED DRIVEWAY QUANTITIES THIS SHEET	
STATION	DRIVEWAY, NONREINF. CONC., 6 INCH (SYD)
15+21 L	40
15+21 R	50
15+53 L	29
15+81 R	21
16+31 R	19
16+84 R	21
17+80 L	48
18+09 L	32
18+63 L	26
19+45 L	32
19+69 R	22





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South Bend, IN 1030 E. Jefferson Blvd. South Bend, IN 46617 T 269.232.3927
Portage, IN 6081 Wilson Road Suite A Portage, IN 46368 T 219.762.9479

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PROJECT:
NORTH SHORE DRIVE RECONSTRUCTION PROJECT
CITY OF SOUTH HAVEN
VAN BUREN COUNTY, MI

SHEET TITLE:
NORTH SHORE DRIVE ROAD WORK AND STORM SEWER PLAN AND PROFILE STA. 15+00 TO 20+00

DRAWN BY: SPJ/SCR
DESIGNED BY: CAK/SPJ/LT
PM REVIEW: TRD
QA/QC REVIEW:
DATE: MAY 2016
SEAL:
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DATE:

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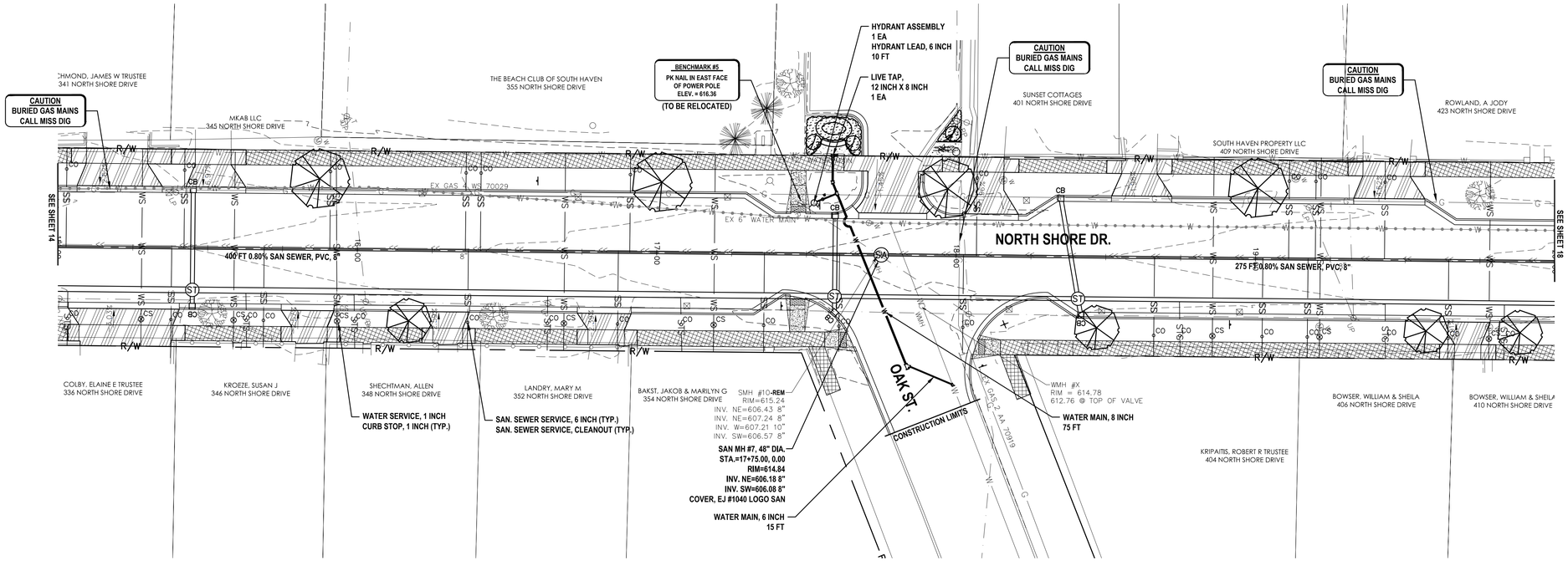
SCALE:
HORZ: 1" = 20"
VERT: 1" = 5'

ACI JOB #
14-0890

SHEET NO.

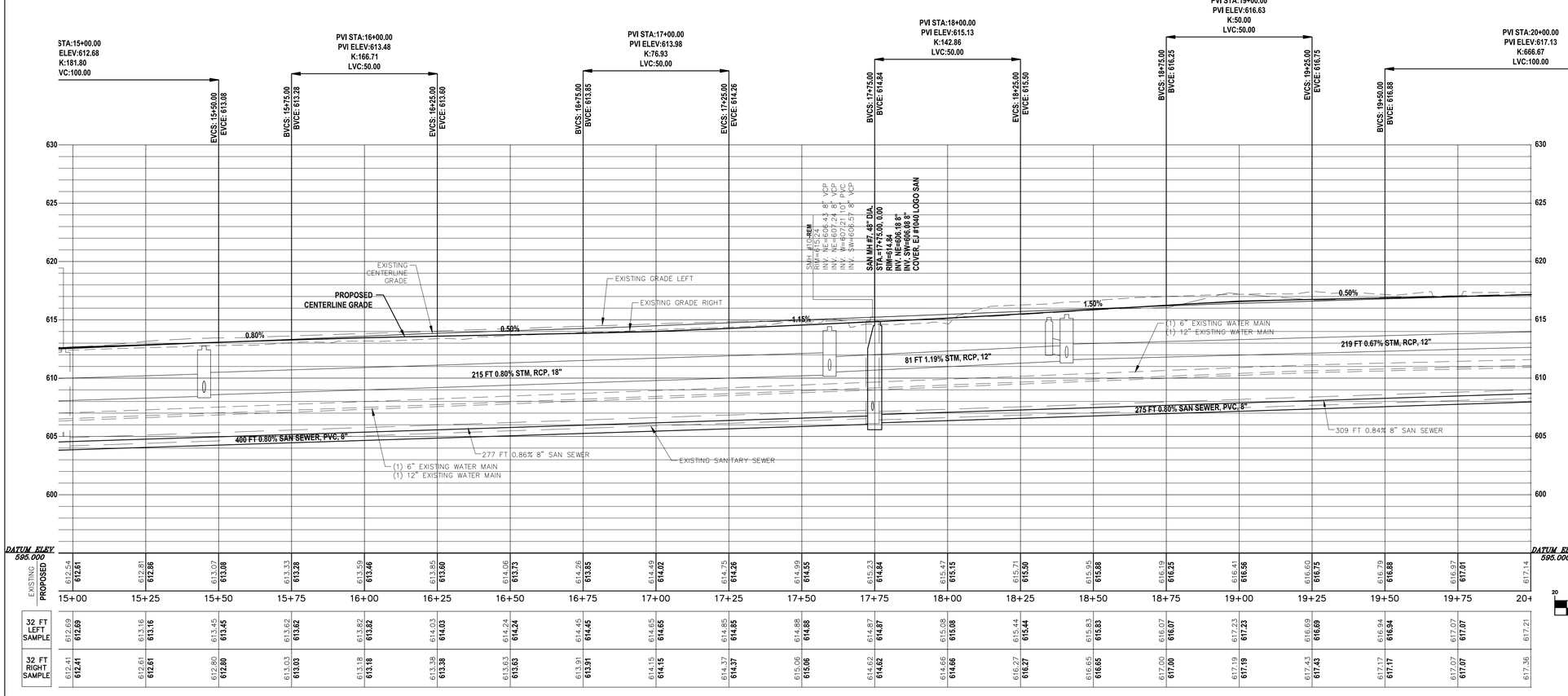
NO.	REVISION DESCRIPTION:	BY:	DATE:

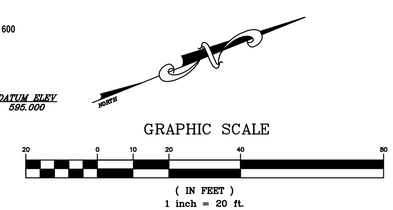


Water and Sanitary Sewer Item Description	Unit	Sht 16 Quantity
Structure, San. MH, 48 inch Dia.	Ea	1
Structure Cover, EJ #1040 Logo San	Ea	1
Water main, 6 inch	Ft	15
Water main, 8 inch	Ft	75
Hydrant Assembly	Ea	1
Hydrant Lead, 6 inch	Ft	10
Live Tap, 12 inch x 8 inch	Ea	1
Water Service, 1 inch	Ft	535
Curb Stop, 1 inch	Ea	8
San. Sewer, PVC SDR 26, 8 inch	Ft	500
San. Sewer Service, 6 inch	Ft	700
San. Sewer Service, Cleanout	Ea	21
Cleanout Riser Cover	Ea	7

HATCH LEGEND

- DRIVEWAY, NONREINF. CONC., 6 INCH
- SIDEWALK, 4 INCH
- SIDEWALK RAMP, 6 INCH
- PROFILE STRUCTURE & PIPE REMOVALS
- DETECTABLE WARNING SURFACE, CAST IRON
- PLAN SEWER REMOVALS
- FILL ABANDONED UTILITY
- HAND PATCHING





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F 231.946.9196
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F 989.777.3908
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PROJECT:

NORTH SHORE DRIVE
RECONSTRUCTION PROJECT
CITY OF SOUTH HAVEN
VAN BUREN COUNTY, MI

SHEET TITLE:

NORTH SHORE DRIVE
WATER AND SANITARY SEWER
PLAN AND PROFILE
STA. 15+00 TO 20+00

DRAWN BY: SPJ/SCR
DESIGNED BY: CAK/SPJ/LT
PM REVIEW: TRD
QA/QC REVIEW:
DATE: MAY 2016
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14-0890

SHEET NO.
16 of 51

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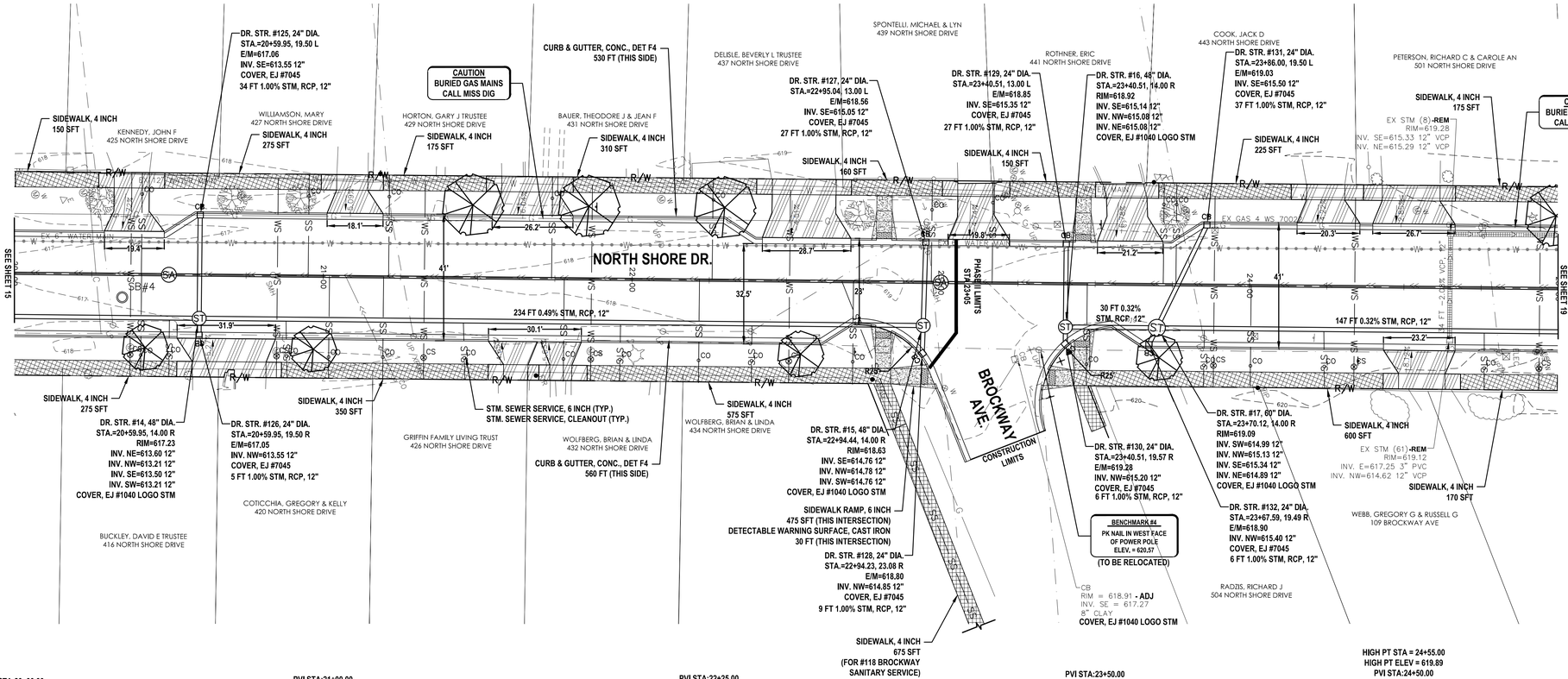
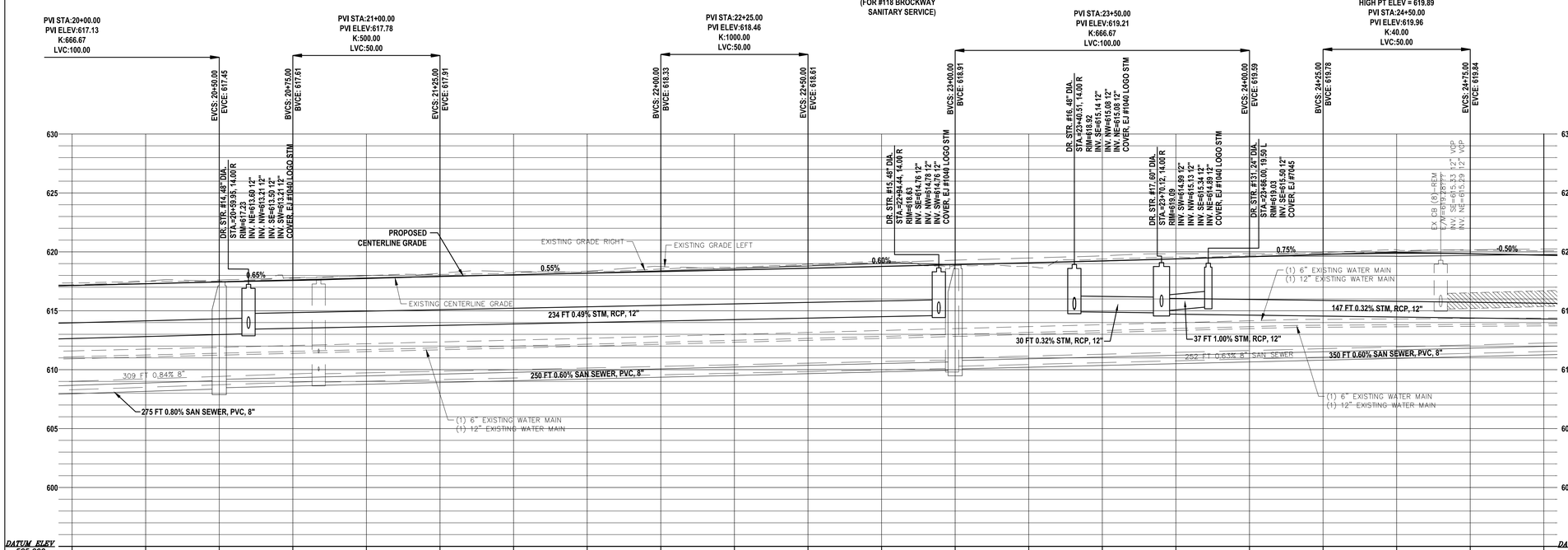


Road Work and Storm Sewer Item Description	Unit	Sht 17 Quantity
Roadway Grading	Sta	5.00
Subgrade Undercutting, Type, II	Cyd	50
Structure Cover, Adjust, Case 2	Ea	1
Subbase, CIP	Cyd	800
Aggregate Base, 21AA, 8 inch	Syd	2400
HMA, 4E3	Ton	455
HMA, 5E3	Ton	185
Sidewalk, 4 inch	Sft	4265
Sidewalk Ramp, 6 inch	Sft	475
Detectable Warning Surface, Cast Iron	Ft	30
Curb & Gutter, Conc., Det F4	Ft	1090
Driveway, Nonreinf. Conc., 6 inch	Syd	375
Structure, Stm. MH, 48 inch Dia.	Ea	3
Structure, Stm. MH, 60 inch Dia.	Ea	1
Structure, Stm. CB, 24 inch Dia.	Ea	8
Structure Cover, EJ #1040 Logo Stm	Ea	5
Structure Cover, EJ #5100	Ea	1
Structure Cover, EJ #7045	Ea	7
Stm. Sewer, RCP, 12 inch	Ft	562
Stm. Sewer Service, 6 inch	Ft	150
Stm. Sewer Service, Cleanout	Ea	8
Underdrain, Subbase, 6 inch	Ft	1000

HATCH LEGEND

- DRIVEWAY, NONREINF. CONC., 6 INCH
- SIDEWALK, 4 INCH
- SIDEWALK RAMP, 6 INCH
- PROFILE STRUCTURE & PIPE REMOVALS
- DETECTABLE WARNING SURFACE, CAST IRON
- PLAN SEWER REMOVALS
- FILL ABANDONED UTILITY
- HAND PATCHING

ESTIMATED DRIVEWAY QUANTITIES THIS SHEET	
STATION	DRIVEWAY, NONREINF. CONC., 6 INCH (SYD)
20+40 L	33
20+66 R	42
21+10 L	24
21+62 R	20
21+67 L	35
21+75 R	18
22+59 L	53
23+11 L	33
23+61 L	35
24+24 L	27
24+52 L	25
24+52 R	30



	20+00	20+25	20+50	20+75	21+00	21+25	21+50	21+75	22+00	22+25	22+50	22+75	23+00	23+25	23+50	23+75	24+00	24+25	24+50	24+75	25+00
EXISTING	617.14	617.30	617.43	617.56	617.73	617.89	618.06	618.20	618.40	618.59	618.80	619.01	618.90	619.06	619.23	619.40	619.57	619.64	619.62	619.69	619.77
PROPOSED	617.14	617.29	617.45	617.61	617.77	617.91	618.05	618.19	618.33	618.47	618.61	618.76	618.91	619.07	619.23	619.41	619.59	619.78	619.88	619.84	619.71
32 FT LEFT SAMPLE	617.21	617.50	617.61	617.79	617.98	618.18	618.33	618.36	618.75	618.60	618.86	619.09	619.29	619.47	619.66	619.84	619.85	619.85	620.03	620.17	620.24
32 FT RIGHT SAMPLE	617.36	617.51	617.51	617.76	617.98	618.08	618.22	618.31	618.54	618.69	618.94	619.16	618.85	618.78	619.39	619.56	619.70	619.95	620.17	620.13	620.09

GRAPHIC SCALE

(IN FEET)
1 inch = 20 ft.

NO.	REVISION DESCRIPTION:	BY:	DATE:

ABONMARCHE
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Mishawaka, MI 25 West Main Street Mishawaka, IN 46523 T 269.927.2225 F 269.927.1017
South Bend, IN Portage, IN

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PROJECT:
NORTH SHORE DRIVE RECONSTRUCTION PROJECT
CITY OF SOUTH HAVEN
VAN BUREN COUNTY, MI

SHEET TITLE:
NORTH SHORE DRIVE
ROAD WORK AND STORM SEWER PLAN AND PROFILE
STA. 20+00 TO 25+00

DRAWN BY: SPJ/SCR
DESIGNED BY: CAK/SPJ/LT
PM REVIEW: TRD
QA/QC REVIEW:
DATE: MAY 2016
SEAL:
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DATE:

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SCALE:
HORZ: 1" = 20'
VERT: 1" = 5'

ACI JOB #
14-0890

SHEET NO.
17 of 51

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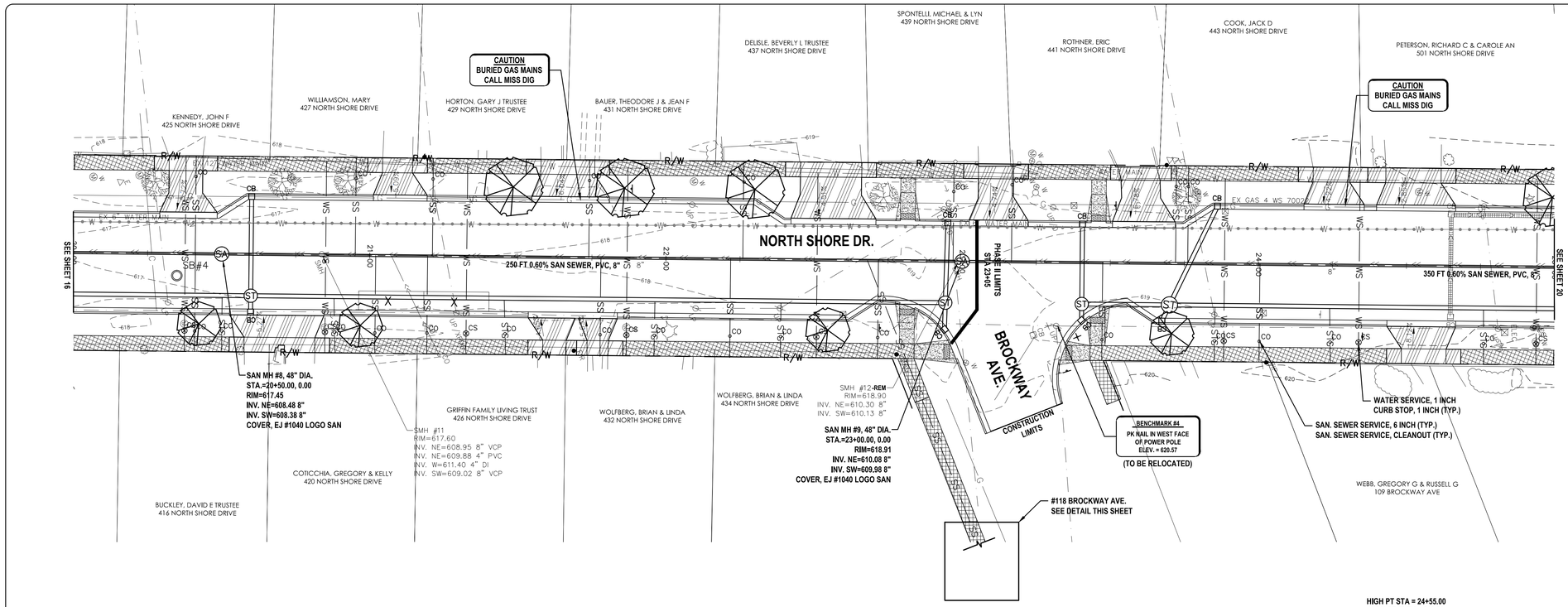
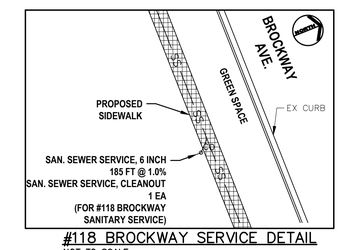
Water and Sanitary Sewer Item Description	Unit	Sht 18 Quantity
Structure, San. MH, 48 inch Dia.	Ea	2
Structure Cover, EJ #1040 Logo San	Ea	2
Water Service, 1 inch	Ft	510
Curb Stop, 1 inch	Ea	8
San. Sewer, PVC SDR 26, 8 inch	Ft	500
San. Sewer Service, 6 inch	Ft	760
San. Sewer Service, Cleanout	Ea	18
Cleanout Riser Cover	Ea	5

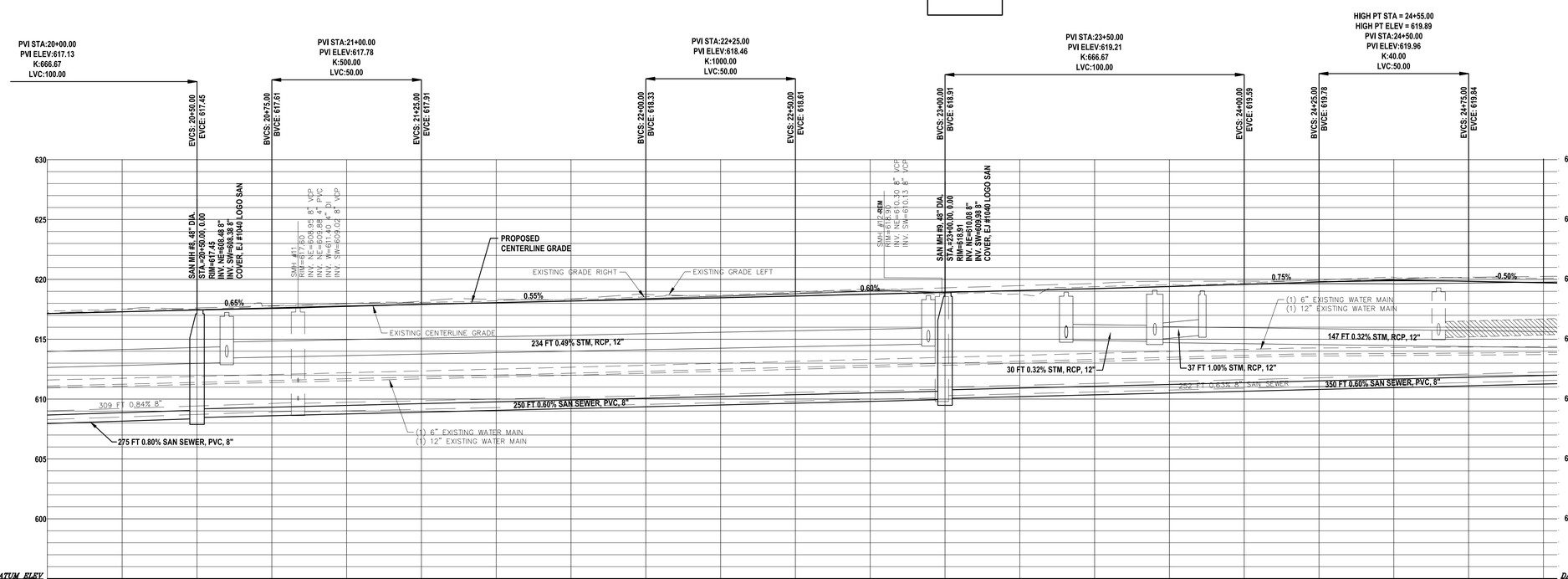


HATCH LEGEND

- DRIVEWAY, NONREINF. CONC., 6 INCH
- SIDEWALK, 4 INCH
- SIDEWALK RAMP, 6 INCH
- PROFILE STRUCTURE & PIPE REMOVALS
- DETECTABLE WARNING SURFACE, CAST IRON
- PLAN SEWER REMOVALS
- FILL ABANDONED UTILITY
- HAND PATCHING



#118 BROCKWAY SERVICE DETAIL
NOT TO SCALE



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EXISTING		617.30	617.43	617.56	617.73	617.89	618.06	618.20	618.40	618.59	618.80	619.01	618.90	619.06	619.23	619.40	619.57	619.64	619.62	619.69	619.77
PROPOSED	617.14	617.29	617.45	617.61	617.77	617.91	618.05	618.19	618.33	618.47	618.61	618.76	618.91	619.07	619.23	619.41	619.59	619.78	619.84	619.84	619.71
32 FT LEFT SAMPLE	617.21	617.50	617.61	617.79	617.98	618.18	618.33	618.36	618.75	618.60	618.86	619.09	619.29	619.47	619.66	619.84	619.85	619.85	620.03	620.17	620.24
32 FT RIGHT SAMPLE	617.36	617.51	617.51	617.76	617.98	618.08	618.22	618.31	618.54	618.69	618.94	619.16	618.85	618.78	619.39	619.56	619.70	619.95	620.17	620.13	620.09

DATUM ELEV 596.000

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

NO.	REVISION DESCRIPTION:	BY:	DATE:

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Portage, IN
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PROJECT:
NORTH SHORE DRIVE
RECONSTRUCTION PROJECT
CITY OF SOUTH HAVEN
VAN BUREN COUNTY, MI

SHEET TITLE:
NORTH SHORE DRIVE
WATER AND SANITARY SEWER
PLAN AND PROFILE
STA. 20+00 TO 25+00

DRAWN BY: SPJ/SCR
DESIGNED BY: CAK/SPJ/LT
PM REVIEW: TRD
QA/QC REVIEW:
DATE: MAY 2016
SEAL:

SIGNATURE:
DATE:

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14-0890

SHEET NO.
18 of 51

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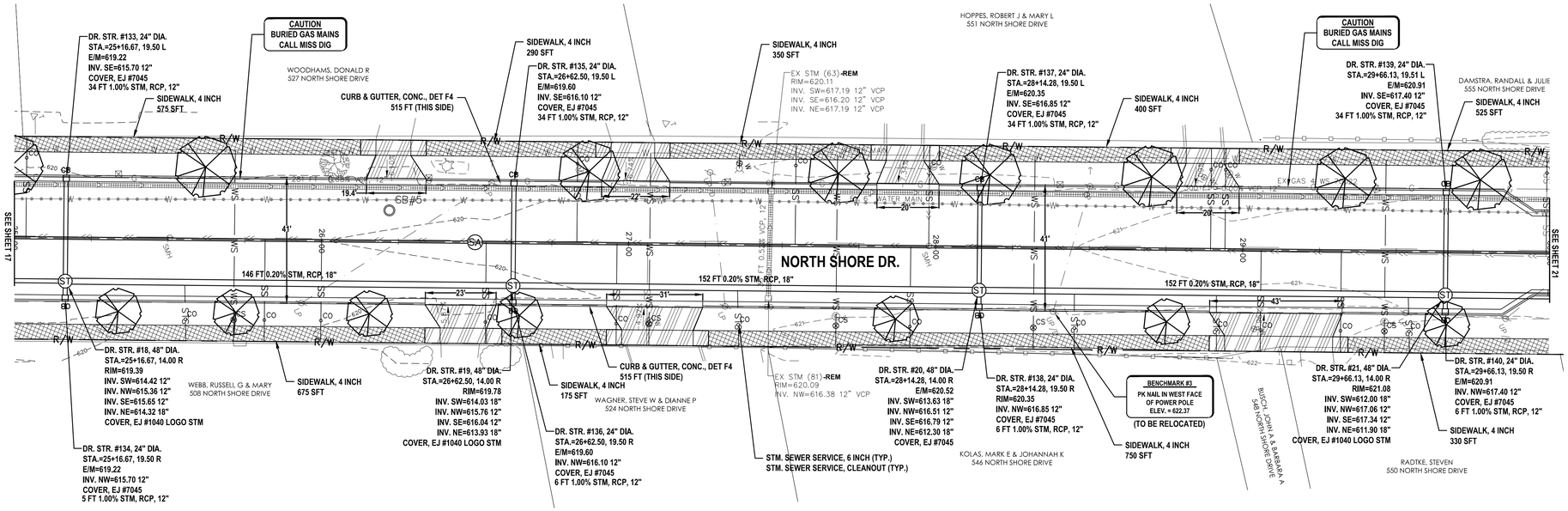
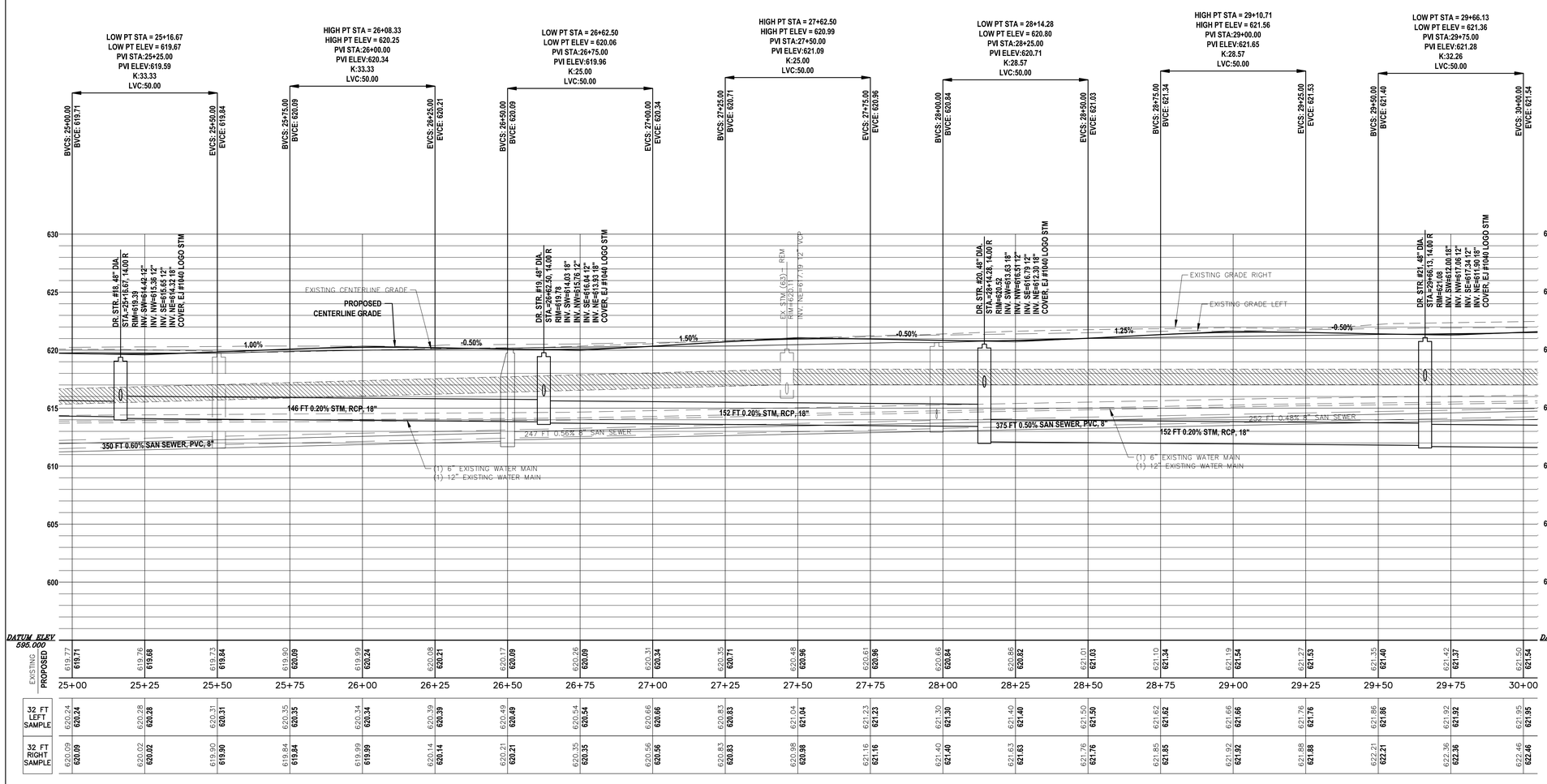


Road Work and Storm Sewer Item Description	Unit	Sht 19 Quantity
Roadway Grading	Sta	5.00
Subgrade Undercutting, Type, II	Cyd	50
Subbase, CIP	Cyd	795
Aggregate Base, 21AA, 8 inch	Syd	2385
HMA, 4E3	Ton	475
HMA, 5E3	Ton	180
Sidewalk, 4 inch	Sft	4070
Curb & Gutter, Conc., Det F4	Ft	1030
Driveway, Nonreinf. Conc., 6 inch	Syd	240
Structure, Stm. MH, 48 inch Dia.	Ea	4
Structure, Stm. CB, 24 inch Dia.	Ea	8
Structure Cover, EJ #1040 Logo Stm	Ea	4
Structure Cover, EJ #7045	Ea	8
Stm. Sewer, RCP, 12 inch	Ft	159
Stm. Sewer, RCP, 18 inch	Ft	500
Stm. Sewer Service, 6 inch	Ft	100
Stm. Sewer Service, Cleanout	Ea	5
Underdrain, Subbase, 6 inch	Ft	1000

HATCH LEGEND

- DRIVEWAY, NONREINF. CONC., 6 INCH
- SIDEWALK, 4 INCH
- SIDEWALK RAMP, 6 INCH
- PROFILE STRUCTURE & PIPE REMOVALS
- DETECTABLE WARNING SURFACE, CAST IRON
- PLAN SEWER REMOVALS
- FILL ABANDONED UTILITY
- HAND PATCHING

ESTIMATED DRIVEWAY QUANTITIES THIS SHEET	
STATION	DRIVEWAY, NONREINF. CONC., 6 INCH (SYD)
26+24 L	25
24+67 R	30
27+05 L	30
27+05 R	43
27+90 L	27
28+88 L	27
29+10 R	58



EXISTING	619.77	619.76	619.73	619.90	619.99	620.08	620.17	620.26	620.31	620.35	620.48	620.61	620.66	620.86	621.01	621.10	621.19	621.27	621.35	621.42	621.50
PROPOSED	619.71	619.68	619.84	620.09	620.24	620.21	620.09	620.09	620.34	620.71	620.96	620.96	620.84	620.82	621.03	621.34	621.54	621.53	621.40	621.37	621.54
25+00	25+25	25+50	25+75	26+00	26+25	26+50	26+75	27+00	27+25	27+50	27+75	28+00	28+25	28+50	28+75	29+00	29+25	29+50	29+75	30+00	

32 FT LEFT SAMPLE	620.24	620.28	620.31	620.35	620.34	620.39	620.49	620.54	620.66	620.83	621.04	621.23	621.30	621.40	621.50	621.62	621.66	621.76	621.86	621.92	621.95
32 FT RIGHT SAMPLE	620.24	620.26	620.31	620.35	620.34	620.39	620.49	620.54	620.66	620.83	621.04	621.23	621.30	621.40	621.50	621.62	621.66	621.76	621.86	621.92	621.95
32 FT LEFT SAMPLE	620.09	620.02	619.90	619.84	619.99	620.14	620.21	620.35	620.56	620.83	620.98	621.16	621.40	621.63	621.76	621.85	621.92	621.88	622.21	622.36	622.46
32 FT RIGHT SAMPLE	620.09	620.02	619.90	619.84	619.99	620.14	620.21	620.35	620.56	620.83	620.98	621.16	621.40	621.63	621.76	621.85	621.92	621.88	622.21	622.36	622.46

NORTH

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

NO.	REVISION DESCRIPTION:	BY:	DATE:

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PROJECT:
NORTH SHORE DRIVE
RECONSTRUCTION PROJECT
CITY OF SOUTH HAVEN
VAN BUREN COUNTY, MI

SHEET TITLE:
NORTH SHORE DRIVE
ROAD WORK AND STORM SEWER
PLAN AND PROFILE
STA. 25+00 TO 30+00

DRAWN BY: SPJ/SCR
DESIGNED BY: CAK/SPJ/LT
PM REVIEW: TRD
QA/QC REVIEW:
DATE: MAY 2016
SEAL:
SIGNATURE:
DATE:

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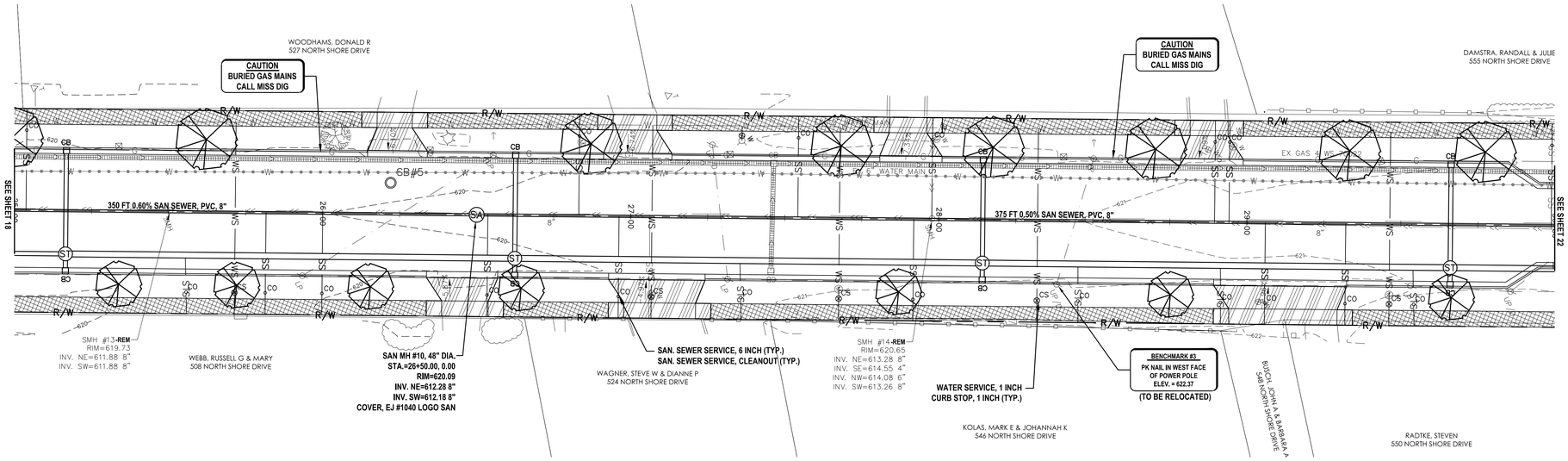
SCALE:
HORZ: 1" = 20'
VERT: 1" = 5'

ACI JOB #
14-0890

SHEET NO.
19 of 51

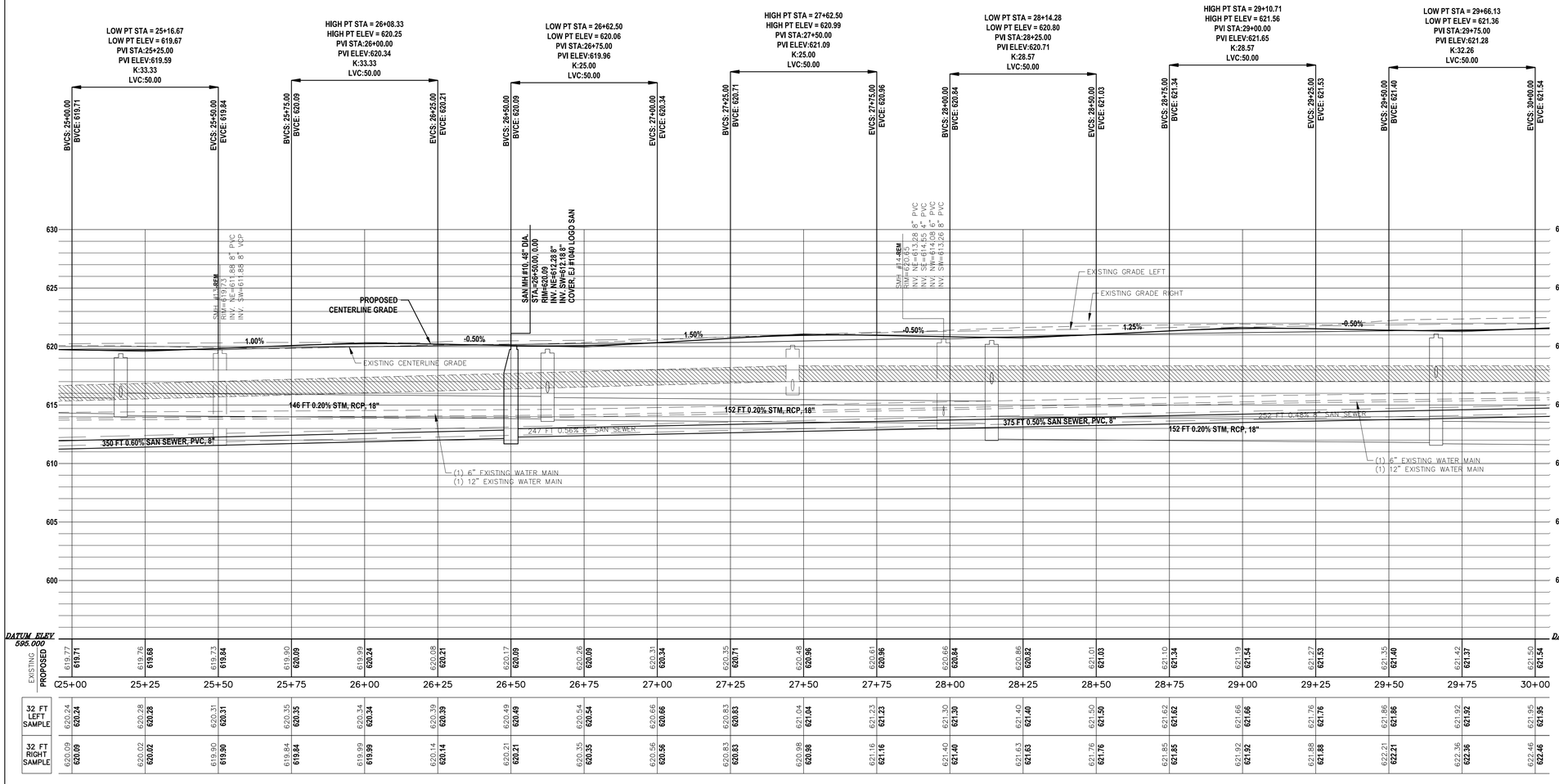
E:\CIVIL 3\12NO_2014\14-0890 NORTH SHORE DRIVE\Dwg\14-0890.01.dwg, 19, 6/6/2016 4:01:46 PM, anderson, 1:1

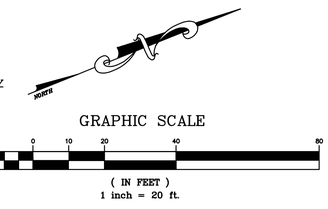
Water and Sanitary Sewer Item Description	Unit	Sht 20 Quantity
Structure, San. MH, 48 inch Dia.	Ea	1
Structure Cover, EJ #1040 Logo San	Ea	1
Water Service, 1 inch	Ft	315
Curb Stop, 1 inch	Ea	5
San. Sewer, PVC SDR 26, 8 inch	Ft	525
San. Sewer Service, 6 inch	Ft	470
San. Sewer Service, Cleanout	Ea	14
Cleanout Riser Cover	Ea	6



HATCH LEGEND

- DRIVEWAY, NONREINF. CONC., 6 INCH
- SIDEWALK, 4 INCH
- SIDEWALK RAMP, 6 INCH
- PROFILE STRUCTURE & PIPE REMOVALS
- DETECTABLE WARNING SURFACE, CAST IRON
- PLAN SEWER REMOVALS
- FILL ABANDONED UTILITY
- HAND PATCHING





NO.	REVISION DESCRIPTION:	BY:	DATE:

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Portage, IN
25 West Main Street
Kalamazoo, MI 49023
T 269.927.2295
F 269.927.1017

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PROJECT:
NORTH SHORE DRIVE
RECONSTRUCTION PROJECT
CITY OF SOUTH HAVEN
VAN BUREN COUNTY, MI

SHEET TITLE:
NORTH SHORE DRIVE
WATER AND SANITARY SEWER
PLAN AND PROFILE
STA. 25+00 TO 30+00

DRAWN BY: SPJ/SCR
DESIGNED BY: CAK/SPJ/LT
PM REVIEW: TRD
QA/QC REVIEW:
DATE: MAY 2016
SEAL:

SIGNATURE:
DATE:

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VERT: 1" = 5'

ACI JOB #
14-0890

SHEET NO.

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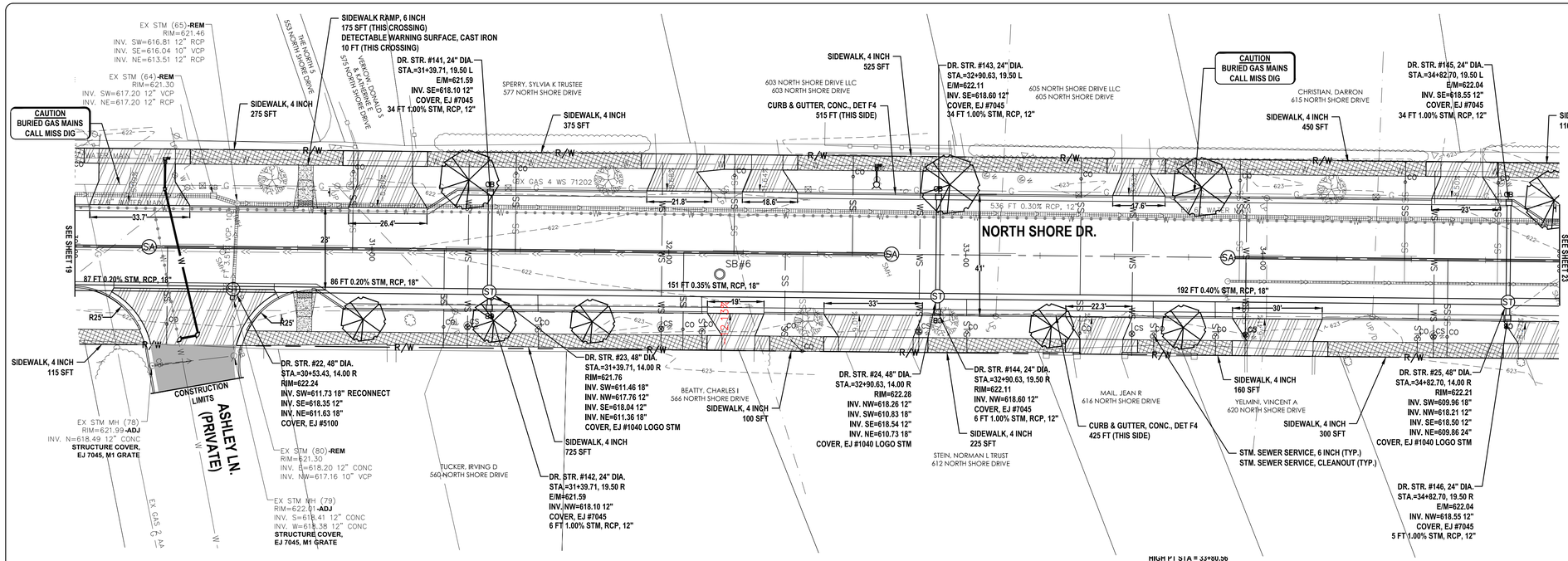
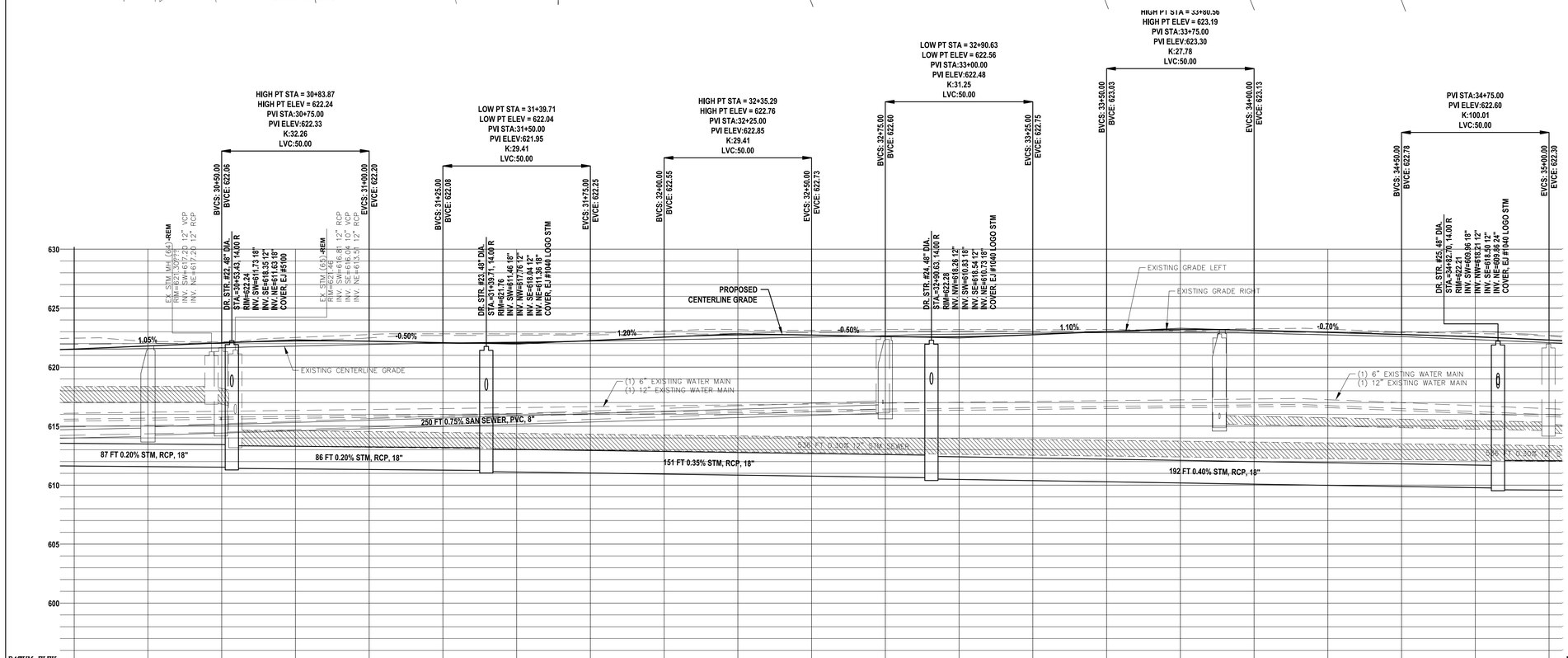


Road Work and Storm Sewer Item Description	Unit	Sht 21 Quantity
Roadway Grading	Sta	5.00
Subgrade Undercutting, Type, II	Cyd	50
Subbase, CIP	Cyd	740
Aggregate Base, 21AA, 8 inch	Syd	2220
HMA, 4E3	Ton	440
HMA, 5E3	Ton	165
Sidewalk, 4 inch	Sft	3360
Sidewalk Ramp, 6 inch	Sft	175
Detectable Warning Surface, Cast Iron	Ft	10
Curb & Gutter, Conc., Det F4	Ft	940
Driveway Opening, Conc., Det M	Ft	60
Driveway, Nonreinf. Conc., 6 inch	Syd	515
Structure, Stm. MH, 48 inch Dia.	Ea	4
Structure, Stm. CB, 24 inch Dia.	Ea	6
Structure, Conn. to Ex. Sewer, 48 inch	Ea	1
Structure Cover, EJ #1040 Logo Stm	Ea	3
Structure Cover, EJ #5100	Ea	1
Structure Cover, EJ #7045	Ea	6
Stm. Sewer, RCP, 12 inch	Ft	124
Stm. Sewer, RCP, 18 inch	Ft	500
Stm. Sewer, RCP, 24 inch	Ft	16
Stm. Sewer Service, 6 inch	Ft	110
Stm. Sewer Service, Cleanout	Ea	6
Underdrain, Subbase, 6 inch	Ft	1000

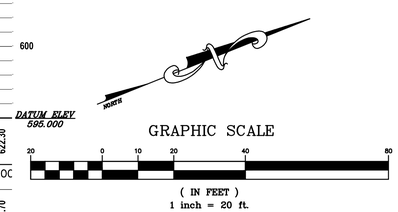
HATCH LEGEND

- DRIVEWAY, NONREINF. CONC., 6 INCH
- SIDEWALK, 4 INCH
- SIDEWALK RAMP, 6 INCH
- PROFILE STRUCTURE & PIPE REMOVALS
- DETECTABLE WARNING SURFACE, CAST IRON
- PLAN SEWER REMOVALS
- FILL ABANDONED UTILITY
- HAND PATCHING

ESTIMATED DRIVEWAY QUANTITIES THIS SHEET	
STATION	DRIVEWAY, NONREINF. CONC., 6 INCH (SYD)
30+23 L	64
30+34 R	124
31+08 L	49
32+07 L	31
32+21 R	25
32+34 L	26
32+65 R	44
33+45 R	29
33+58 L	23
34+10 R	40
34+67 L	29
34+92 R	31



STATION	30+00	30+25	30+50	30+75	31+00	31+25	31+50	31+75	32+00	32+25	32+50	32+75	33+00	33+25	33+50	33+75	34+00	34+25	34+50	34+75	35+00
EXISTING	621.50	621.57	621.64	621.79	621.93	622.05	622.13	622.21	622.32	622.43	622.55	622.66	622.80	622.88	622.92	622.92	622.88	622.74	622.60	622.34	622.08
PROPOSED	621.54	621.80	622.06	622.23	622.20	622.08	622.06	622.25	622.35	622.74	622.73	622.60	622.58	622.75	623.03	623.19	623.13	622.95	622.78	622.57	622.30
32 FT LEFT SAMPLE	621.95	622.02	622.11	622.26	622.48	622.69	622.70	622.74	622.81	622.86	622.94	623.01	623.05	623.04	623.03	623.05	622.97	622.95	622.93	623.07	622.70
32 FT RIGHT SAMPLE	622.46	622.18	622.15	622.52	622.76	622.83	622.82	622.86	623.07	623.17	623.13	623.19	623.20	623.18	623.20	623.10	623.28	623.23	622.99	622.85	622.63



NO.	REVISION DESCRIPTION:	BY:	DATE:

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P 269.927.2295
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PROJECT:
NORTH SHORE DRIVE
RECONSTRUCTION PROJECT
CITY OF SOUTH HAVEN
VAN BUREN COUNTY, MI

SHEET TITLE:
NORTH SHORE DRIVE
ROAD WORK AND STORM SEWER
PLAN AND PROFILE
STA. 30+00 TO 35+00

DRAWN BY: SPJ/SCR
DESIGNED BY: CAK/SPJ/LT
PM REVIEW: TRD
QA/QC REVIEW:
DATE: MAY 2016
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SCALE:
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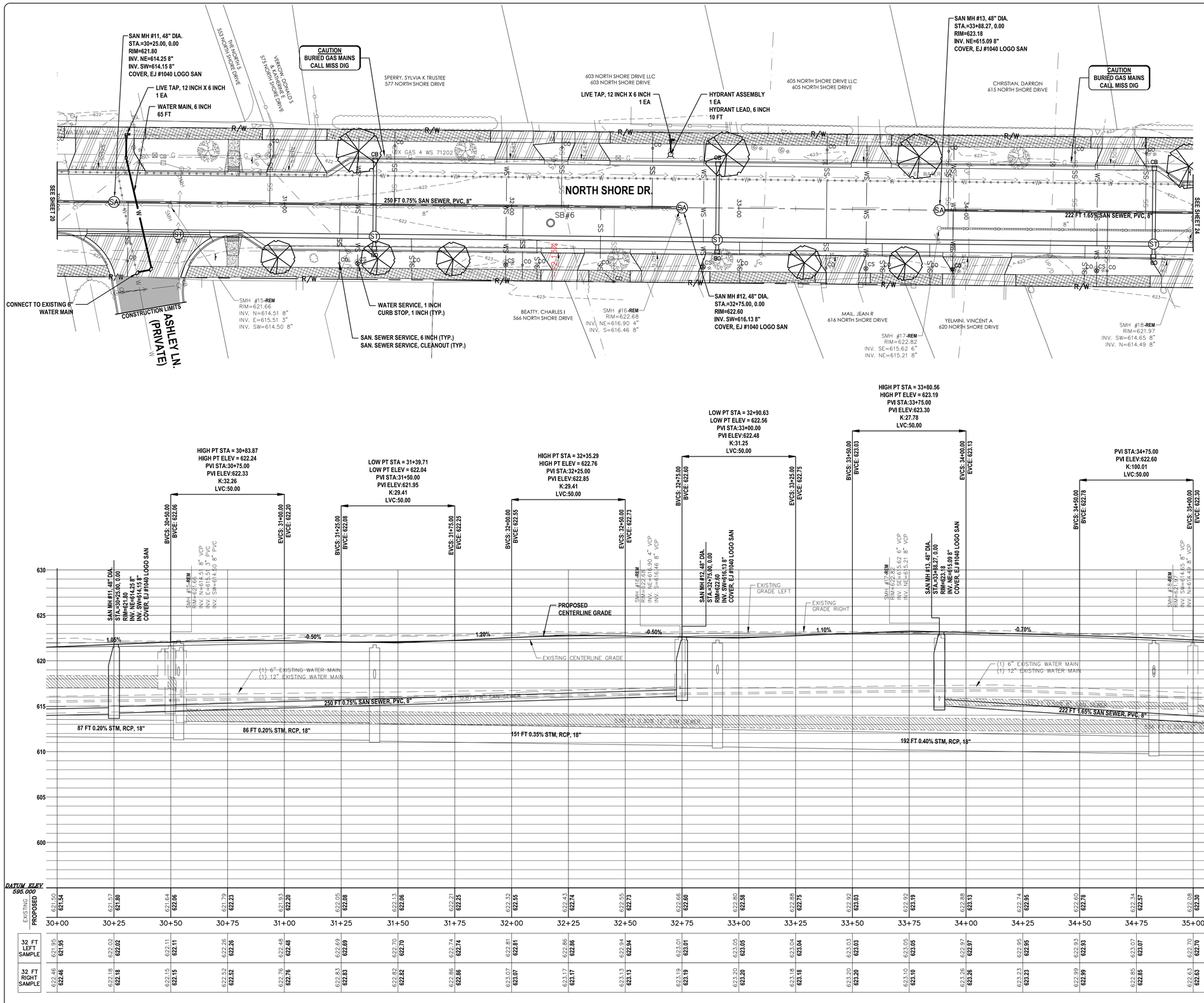
ACI JOB #
14-0890

SHEET NO.
21 of 51



Water and Sanitary Sewer Item Description	Unit	Sht 22 Quantity
Structure, San. MH, 48 inch Dia.	Ea	3
Structure Cover, EJ #1040 Logo San	Ea	3
Water main, 6 inch	Ft	65
Hydrant Assembly	Ea	1
Hydrant Lead, 6 inch	Ft	10
Live Tap, 12 inch x 6 inch	Ea	1
Water Service, 1 inch	Ft	375
Curb Stop, 1 inch	Ea	6
San. Sewer, PVC SDR 26, 8 inch	Ft	400
San. Sewer Service, 6 inch	Ft	435
San. Sewer Service, Cleanout	Ea	15
Cleanout Riser Cover	Ea	2

HATCH LEGEND

- DRIVEWAY, NONREINF. CONC., 6 INCH
- SIDEWALK, 4 INCH
- SIDEWALK RAMP, 6 INCH
- PROFILE STRUCTURE & PIPE REMOVALS
- DETECTABLE WARNING SURFACE, CAST IRON
- PLAN SEWER REMOVALS
- FILL ABANDONED UTILITY
- HAND PATCHING

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

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PROJECT:

NORTH SHORE DRIVE
RECONSTRUCTION PROJECT
CITY OF SOUTH HAVEN
VAN BUREN COUNTY, MI

SHEET TITLE:

NORTH SHORE DRIVE
WATER AND SANITARY SEWER
PLAN AND PROFILE
STA. 30+00 TO 35+00

DRAWN BY: SPJ/SCR
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ACI JOB #
14-0890

SHEET NO.
22 of 51

NO.	REVISION DESCRIPTION:	BY:	DATE:

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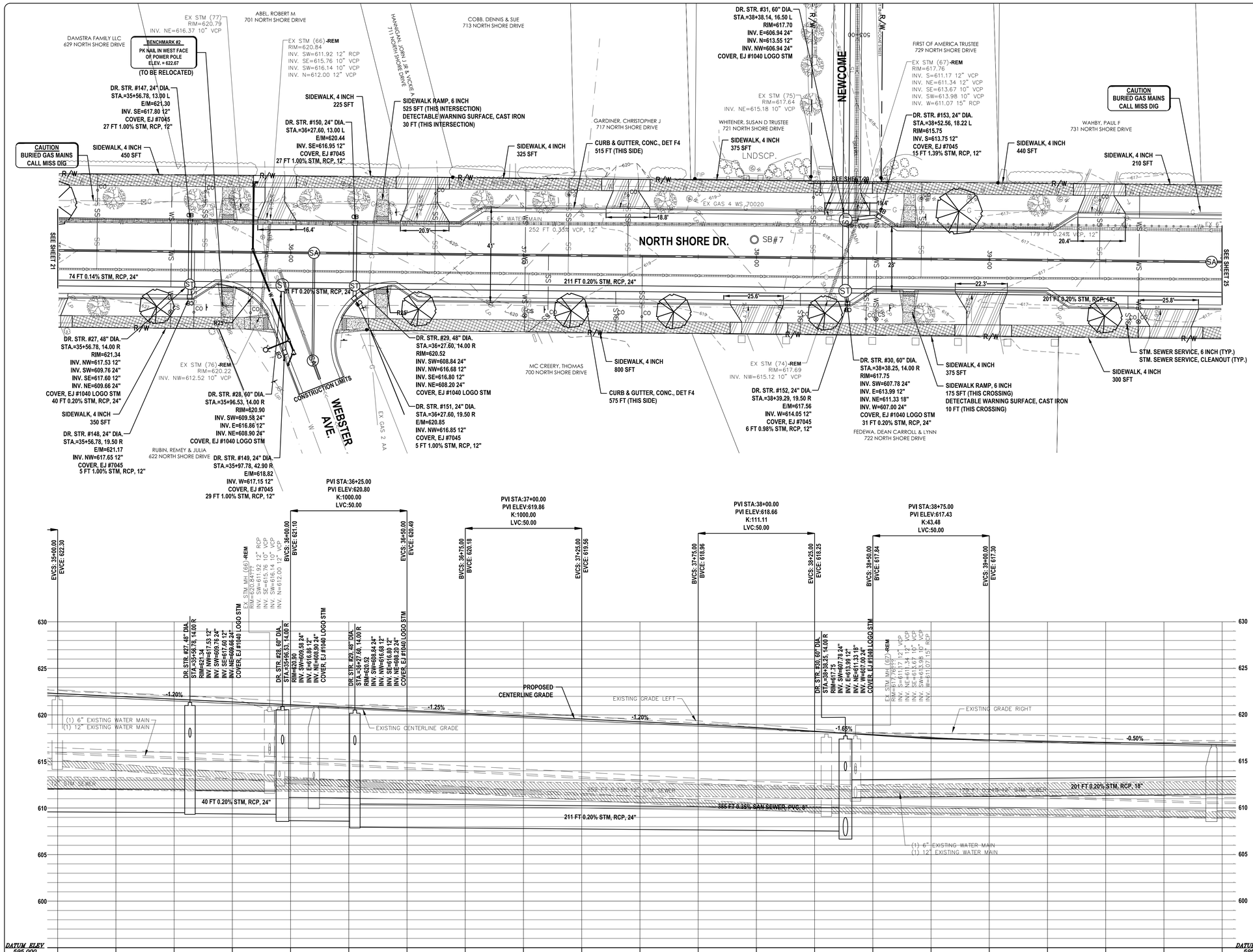

Road Work and Storm Sewer Item Description	Unit	Sht 23 Quantity
Roadway Grading	Sta	5.00
Subgrade Undercutting, Type, II	Cyd	50
Subbase, CIP	Cyd	740
Aggregate Base, 21AA, 8 inch	Syd	2220
HMA, 4E3	Ton	430
HMA, 5E3	Ton	170
Sidewalk, 4 inch	Sft	3850
Sidewalk Ramp, 6 inch	Sft	700
Detectable Warning Surface, Cast Iron	Ft	40
Curb & Gutter, Conc., Det F4	Ft	1090
Driveway, Nonreinf. Conc., 6 inch	Syd	245
Structure, Stm. MH, 48 inch Dia.	Ea	2
Structure, Stm. MH, 60 inch Dia.	Ea	3
Structure, Stm. CB, 24 inch Dia.	Ea	7
Structure Cover, EJ #1040 Logo Stm	Ea	5
Structure Cover, EJ #7045	Ea	7
Stm. Sewer, RCP, 12 inch	Ft	114
Stm. Sewer, RCP, 18 inch	Ft	160
Stm. Sewer, RCP, 24 inch	Ft	350
Stm. Sewer Service, 6 inch	Ft	55
Stm. Sewer Service, Cleanout	Ea	3
Underdrain, Subbase, 6 inch	Ft	1000

HATCH LEGEND

- DRIVEWAY, NONREINF. CONC., 6 INCH
- SIDEWALK, 4 INCH
- SIDEWALK RAMP, 6 INCH
- PROFILE STRUCTURE & PIPE REMOVALS
- DETECTABLE WARNING SURFACE, CAST IRON
- PLAN SEWER REMOVALS
- FILL ABANDONED UTILITY
- HAND PATCHING

ESTIMATED DRIVEWAY QUANTITIES THIS SHEET	
STATION	DRIVEWAY, NONREINF. CONC., 6 INCH (SYD)
35+96 L	28
36+59 L	37
37+46 L	24
37+95 R	30
38+48 L	26
38+95 R	39
39+48 L	27
39+76 R	34

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Landscape Architecture
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Portage, IN
25 West Main Street
Mishawaka, MI 46523
T 269.927.1225
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PROJECT:
NORTH SHORE DRIVE RECONSTRUCTION PROJECT
CITY OF SOUTH HAVEN
VAN BUREN COUNTY, MI

SHEET TITLE:
NORTH SHORE DRIVE
ROAD WORK AND STORM SEWER PLAN AND PROFILE
STA. 35+00 TO 40+00

DRAWN BY: SPJ/SCR
DESIGNED BY: CAK/SPJ/LT
PM REVIEW: TRD
QA/QC REVIEW:
DATE: MAY 2016
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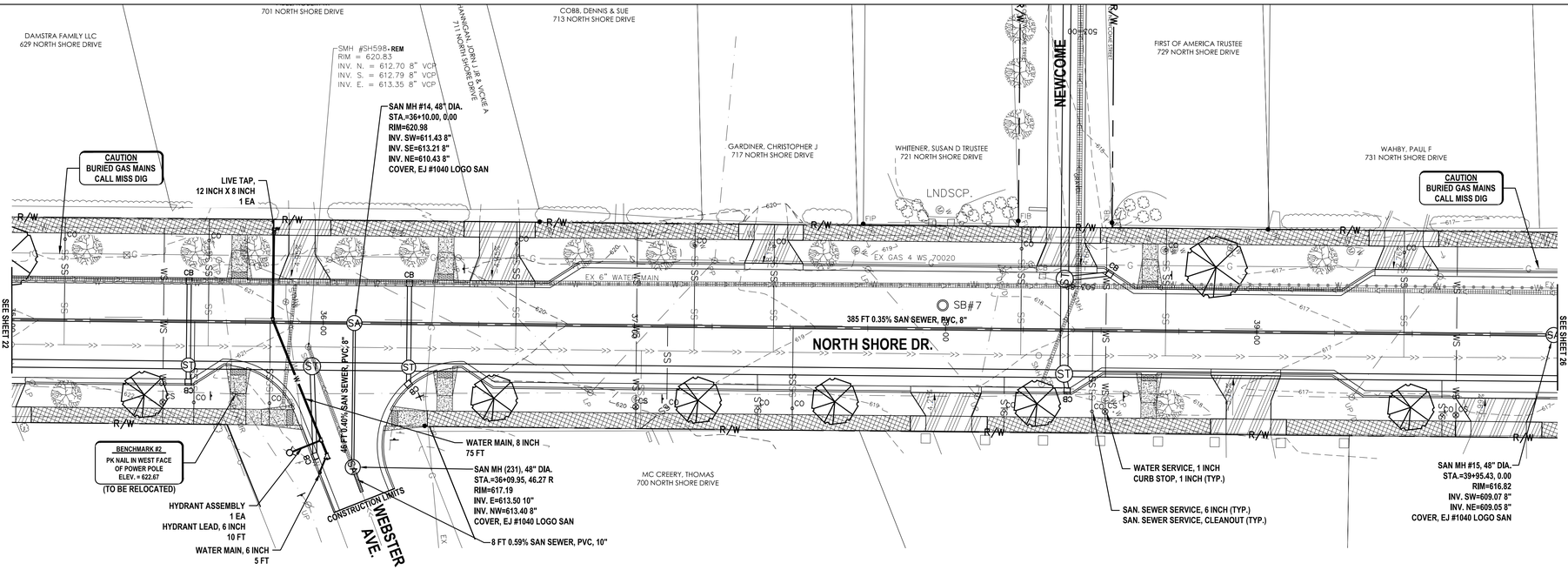
ACI JOB #
14-0890

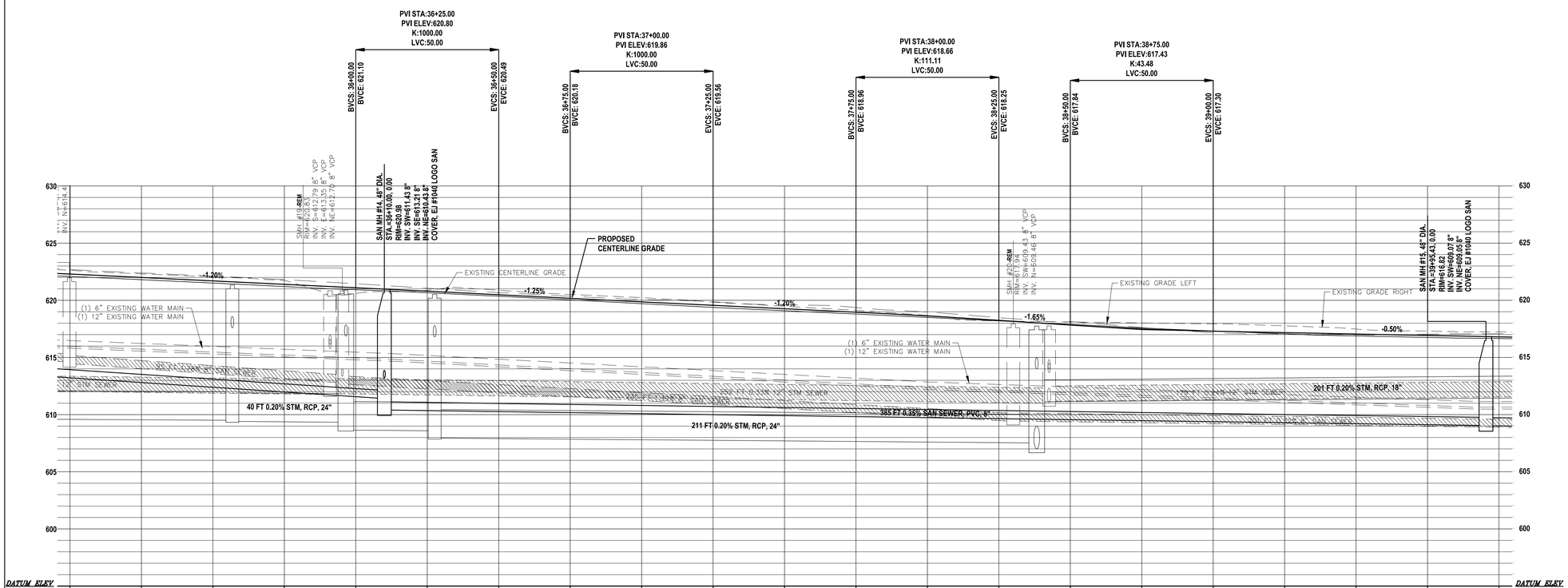
SHEET NO.
23 of 51



Water and Sanitary Sewer Item Description	Unit	Sht 24 Quantity
Structure, San. MH, 48 inch Dia.	Ea	3
Structure Cover, EJ #1040 Logo San	Ea	3
Water main, 6 inch	Ft	5
Water main, 8 inch	Ft	75
Hydrant Assembly	Ea	1
Hydrant Lead, 6 inch	Ft	10
Live Tap, 12 inch x 8 inch	Ea	1
Water Service, 1 inch	Ft	255
Curb Stop, 1 inch	Ea	4
San. Sewer, PVC SDR 26, 8 inch	Ft	500
San. Sewer Service, 6 inch	Ft	485
San. Sewer Service, Cleanout	Ea	13
Cleanout Riser Cover	Ea	3

HATCH LEGEND

- DRIVEWAY, NONREINF. CONC., 6 INCH
- SIDEWALK, 4 INCH
- SIDEWALK RAMP, 6 INCH
- PROFILE STRUCTURE & PIPE REMOVALS
- DETECTABLE WARNING SURFACE, CAST IRON
- PLAN SEWER REMOVALS
- FILL ABANDONED UTILITY
- HAND PATCHING



	35+00	35+25	35+50	35+75	36+00	36+25	36+50	36+75	37+00	37+25	37+50	37+75	38+00	38+25	38+50	38+75	39+00	39+25	39+50	39+75	40+00
EXISTING	622.08	621.81	621.51	621.21	620.93	620.66	620.38	620.04	619.71	619.38	619.09	618.80	618.51	618.20	617.90	617.59	617.32	617.07	616.88	616.76	616.66
PROPOSED	622.30	622.00	621.70	621.40	621.10	620.80	620.49	620.18	619.87	619.56	619.26	618.96	618.63	618.25	617.84	617.50	617.30	617.18	617.05	616.93	616.80
32 FT LEFT SAMPLE	622.70	622.40	622.12	621.81	621.46	621.06	620.67	620.35	620.08	619.88	619.60	619.37	618.97	618.49	618.13	617.62	617.15	617.04	616.99	617.03	617.08
32 FT RIGHT SAMPLE	622.63	622.31	622.05	621.75	620.59	620.87	620.88	620.51	620.24	619.84	619.48	619.13	618.67	618.20	618.11	618.02	617.94	617.77	617.48	617.31	617.25

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

NO.	REVISION DESCRIPTION:	BY:	DATE:

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PROJECT:
NORTH SHORE DRIVE
RECONSTRUCTION PROJECT
CITY OF SOUTH HAVEN
VAN BUREN COUNTY, MI

SHEET TITLE:
NORTH SHORE DRIVE
WATER AND SANITARY SEWER
PLAN AND PROFILE
STA. 35+00 TO 40+00

DRAWN BY: SPJ/SCR
DESIGNED BY: CAK/SPJ/LT
PM REVIEW: TRD
QA/QC REVIEW:
DATE: MAY 2016
SEAL:

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SCALE:
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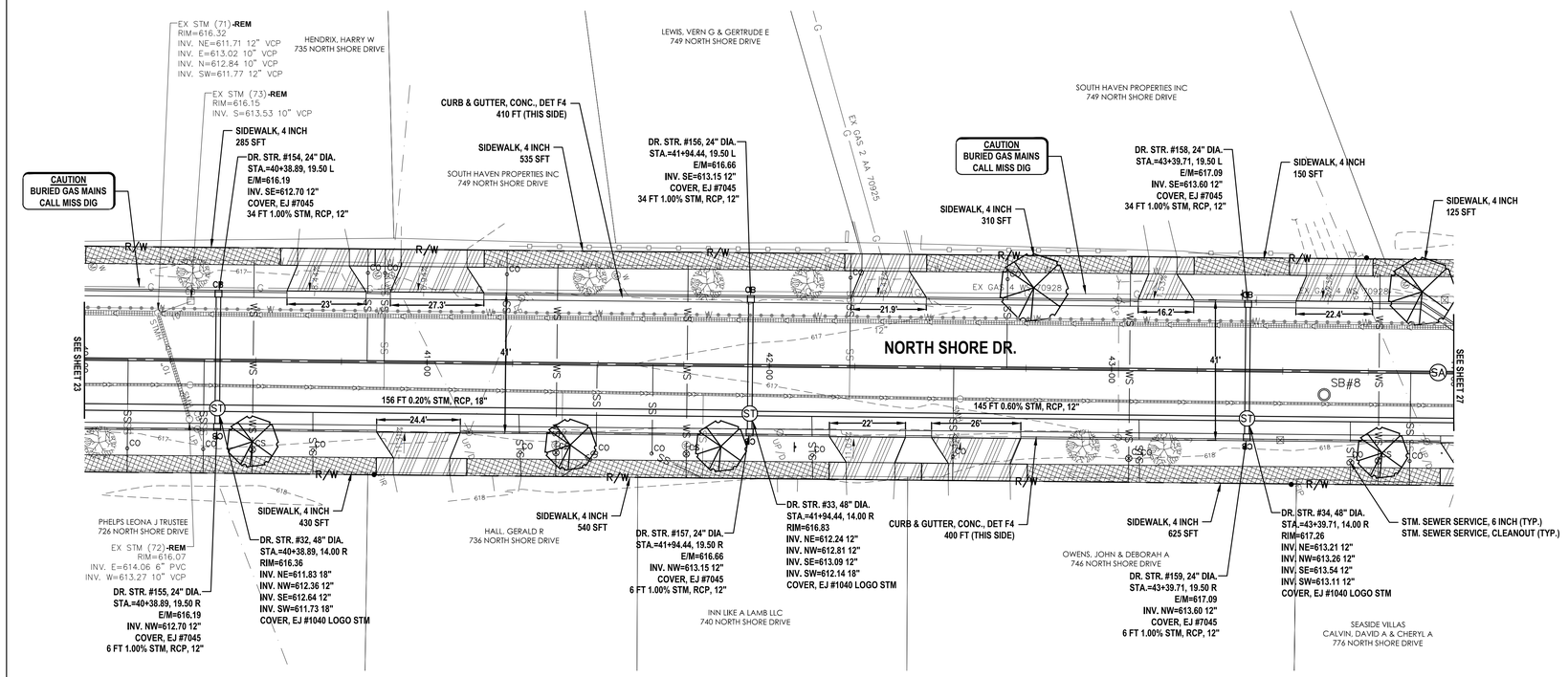
VERT: 1" = 5'

ACI JOB #
14-0890

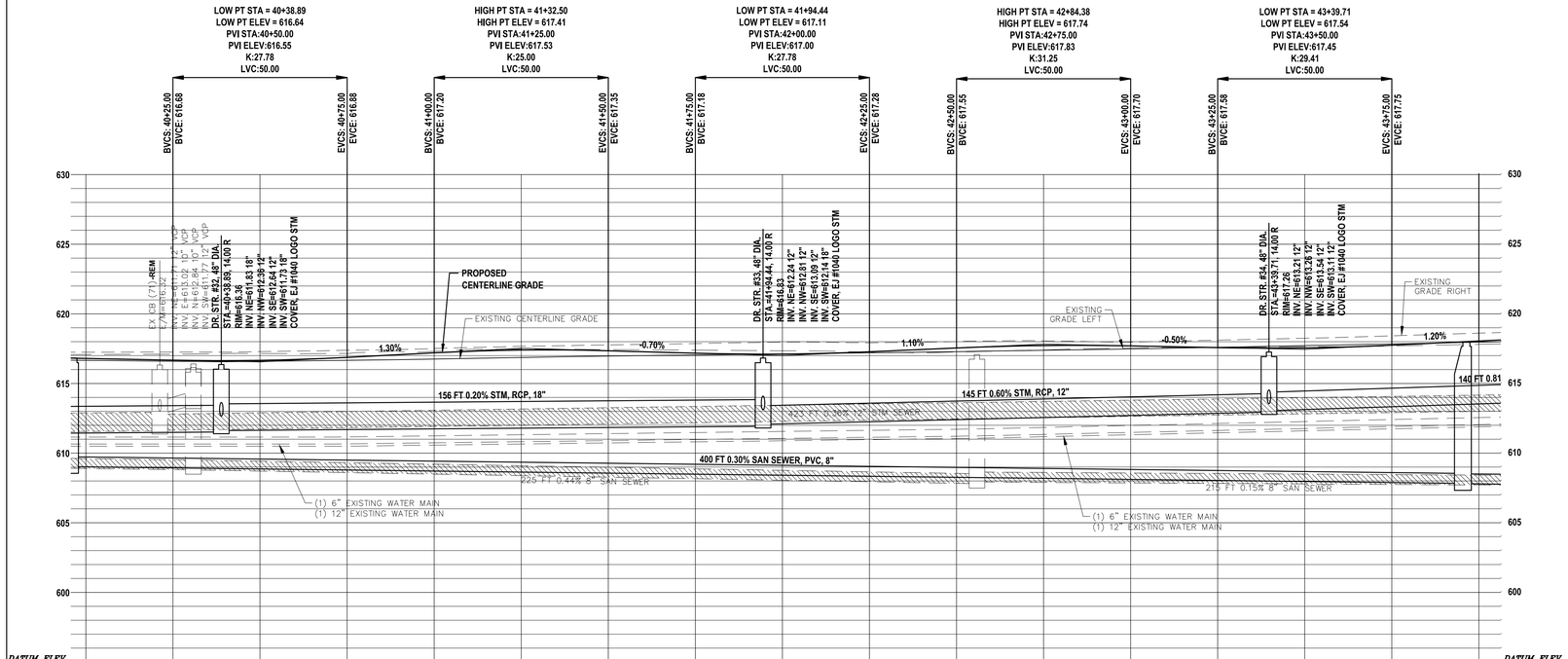
SHEET NO.
24 of 51

Road Work and Storm Sewer Item Description	Unit	Sht 25 Quantity
Roadway Grading	Sta	4.00
Subgrade Undercutting, Type, II	Cyd	50
Subbase, CIP	Cyd	640
Aggregate Base, 21AA, 8 inch	Syd	1920
HMA, 4E3	Ton	385
HMA, 5E3	Ton	150
Sidewalk, 4 inch	Sft	3000
Curb & Gutter, Conc., Det F4	Ft	810
Driveway, Nonreinf. Conc., 6 inch	Syd	250
Structure, Stm. MH, 48 inch Dia.	Ea	3
Structure, Stm. CB, 24 inch Dia.	Ea	6
Structure Cover, EJ #1040 Logo Stm	Ea	3
Structure Cover, EJ #7045	Ea	6
Stm. Sewer, RCP, 12 inch	Ft	325
Stm. Sewer, RCP, 18 inch	Ft	200
Stm. Sewer Service, 6 inch	Ft	100
Stm. Sewer Service, Cleanout	Ea	5
Underdrain, Subbase, 6 inch	Ft	800



HATCH LEGEND

- DRIVEWAY, NONREINF. CONC., 6 INCH
- SIDEWALK, 4 INCH
- SIDEWALK RAMP, 6 INCH
- PROFILE STRUCTURE & PIPE REMOVALS
- DETECTABLE WARNING SURFACE, CAST IRON
- PLAN SEWER REMOVALS
- FILL ABANDONED UTILITY
- HAND PATCHING



STATION	EXISTING	PROPOSED	32 FT LEFT SAMPLE	32 FT RIGHT SAMPLE
40+00	616.66	616.80	617.08	617.25
40+25	616.89	616.88	617.11	617.25
40+50	616.59	616.66	617.15	617.28
40+75	616.66	616.88	617.15	617.38
41+00	616.75	617.20	617.31	617.51
41+25	616.87	617.40	617.47	617.67
41+50	616.97	617.35	617.44	617.77
41+75	617.04	617.18	617.39	617.87
42+00	617.12	617.11	617.35	617.97
42+25	617.20	617.28	617.25	617.92
42+50	617.29	617.55	617.26	618.00
42+75	617.39	617.73	617.41	618.06
43+00	617.48	617.70	617.55	617.98
43+25	617.60	617.58	617.59	618.11
43+50	617.72	617.56	617.65	618.25
43+75	617.84	617.75	617.69	618.42
44+00	617.96	618.05	617.81	618.61

ESTIMATED DRIVEWAY QUANTITIES THIS SHEET	
STATION	DRIVEWAY, NONREINF. CONC., 6 INCH (SYD)
40+67 L	32
40+92 L	38
40+92 R	32
42+29 R	32
42+32 L	29
42+45 L	36
42+62 R	22
43+69 L	29

GRAPHIC SCALE

(IN FEET)
1 inch = 20 ft.

NO.	REVISION DESCRIPTION:	BY:	DATE:

ABONMARCHE
Confidence By Design
Engineering Architecture Land Development Marina/Waterfront Construction Management Landscape Architecture Development Services
Manistee, MI Traverse City, MI South Bend, IN Portage, IN
PO West Main Street P.O. Box 5, Muskegon, MI 49443
T 269.927.2295 F 269.927.1017

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PROJECT:
NORTH SHORE DRIVE RECONSTRUCTION PROJECT
CITY OF SOUTH HAVEN
VAN BUREN COUNTY, MI

SHEET TITLE:
NORTH SHORE DRIVE ROAD WORK AND STORM SEWER PLAN AND PROFILE STA. 40+00 TO 44+00

DRAWN BY: SPJ/SCR
DESIGNED BY: CAK/SPJ/LT
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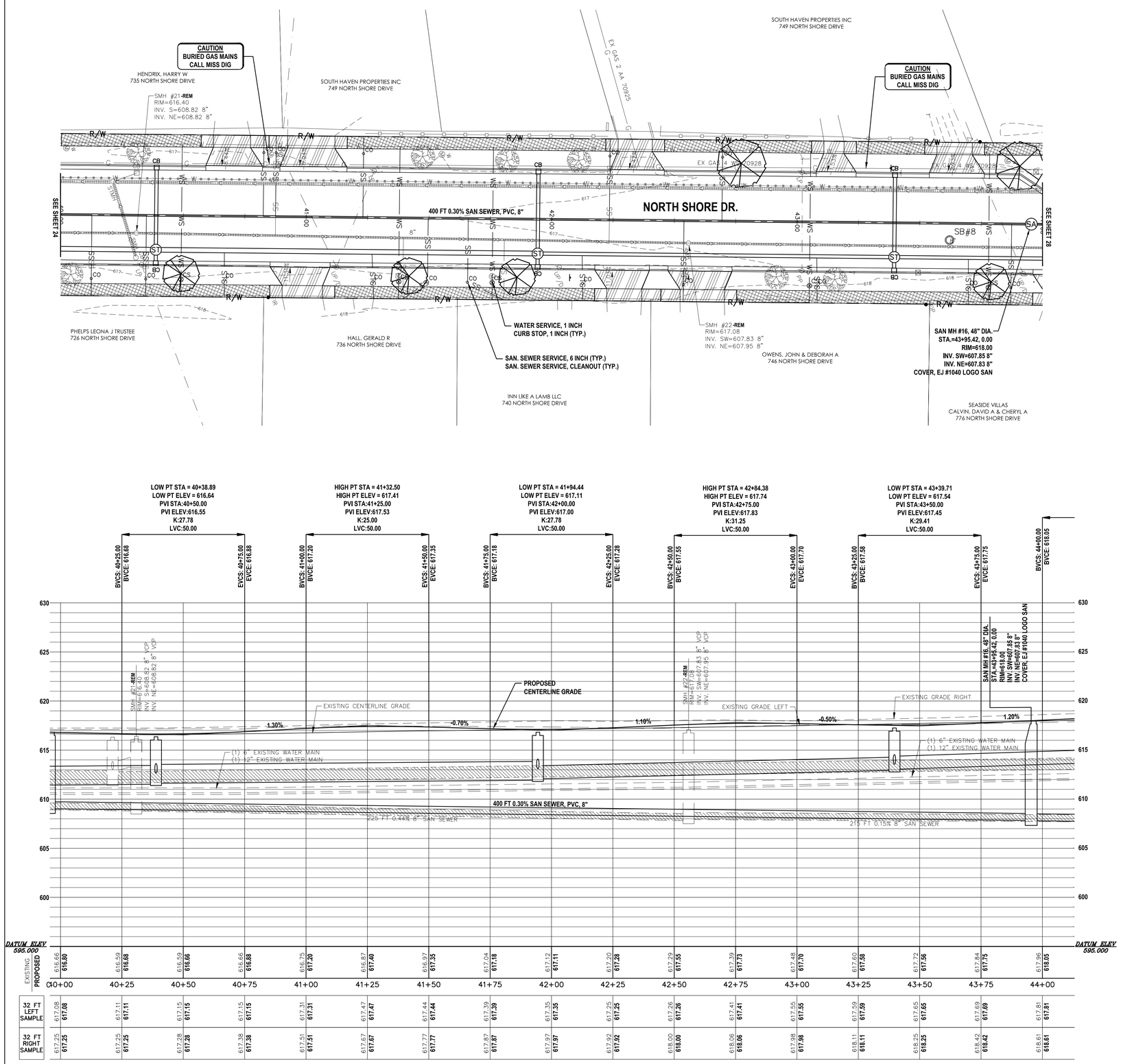
SCALE:
HORZ: 1" = 20'
VERT: 1" = 5'

ACI JOB #
14-0890

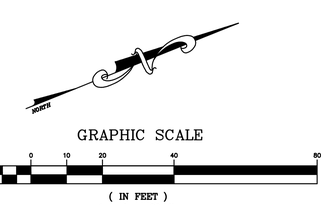
SHEET NO.
25 of 51

Water and Sanitary Sewer Item Description	Unit	Sht 26 Quantity
Structure, San. MH, 48 inch Dia.	Ea	1
Structure Cover, EJ #1040 Logo San	Ea	1
Water Service, 1 inch	Ft	310
Curb Stop, 1 inch	Ea	5
San. Sewer, PVC SDR 26, 8 inch	Ft	400
San. Sewer Service, 6 inch	Ft	385
San. Sewer Service, Cleanout	Ea	11
Cleanout Riser Cover	Ea	1



HATCH LEGEND

- DRIVEWAY, NONREINF. CONC., 6 INCH
- SIDEWALK, 4 INCH
- SIDEWALK RAMP, 6 INCH
- PROFILE STRUCTURE & PIPE REMOVALS
- DETECTABLE WARNING SURFACE, CAST IRON
- PLAN SEWER REMOVALS
- FILL ABANDONED UTILITY
- HAND PATCHING



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PROJECT:
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RECONSTRUCTION PROJECT
CITY OF SOUTH HAVEN
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SHEET TITLE:
NORTH SHORE DRIVE
WATER AND SANITARY SEWER
PLAN AND PROFILE
STA. 40+00 TO 44+00

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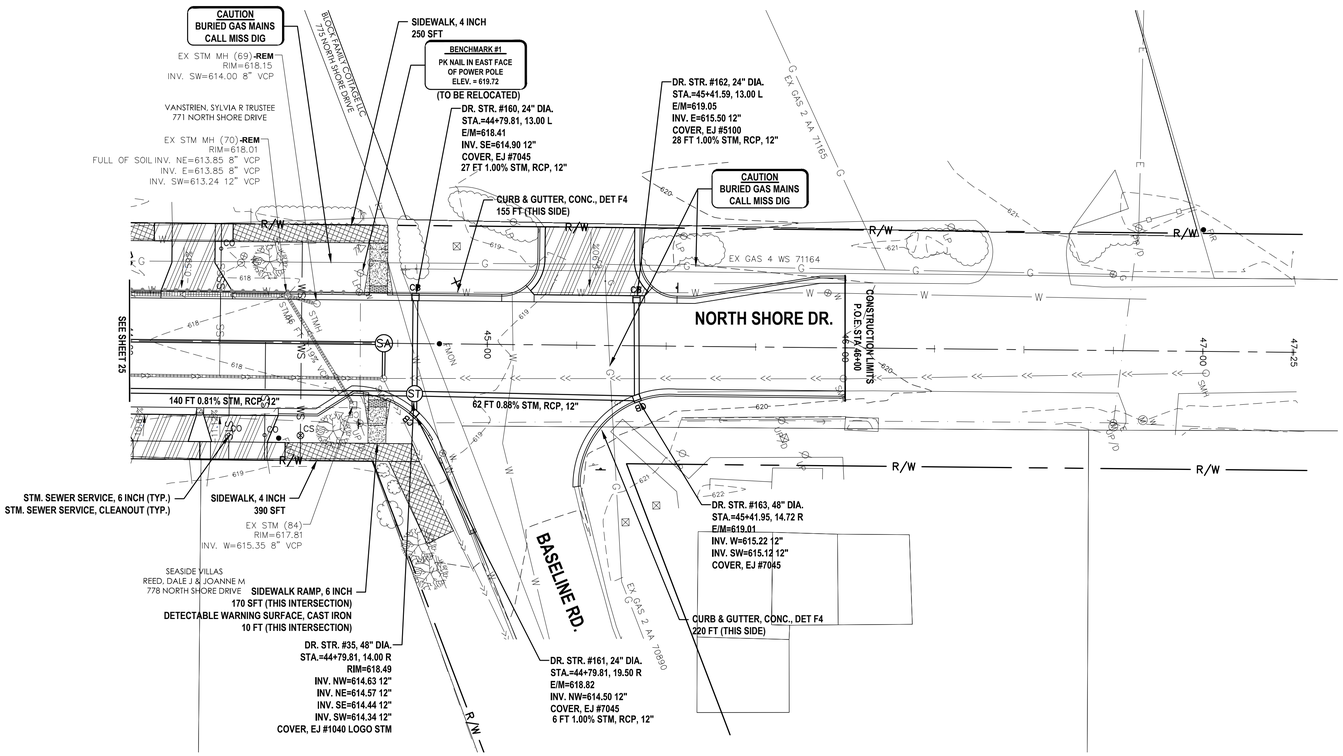

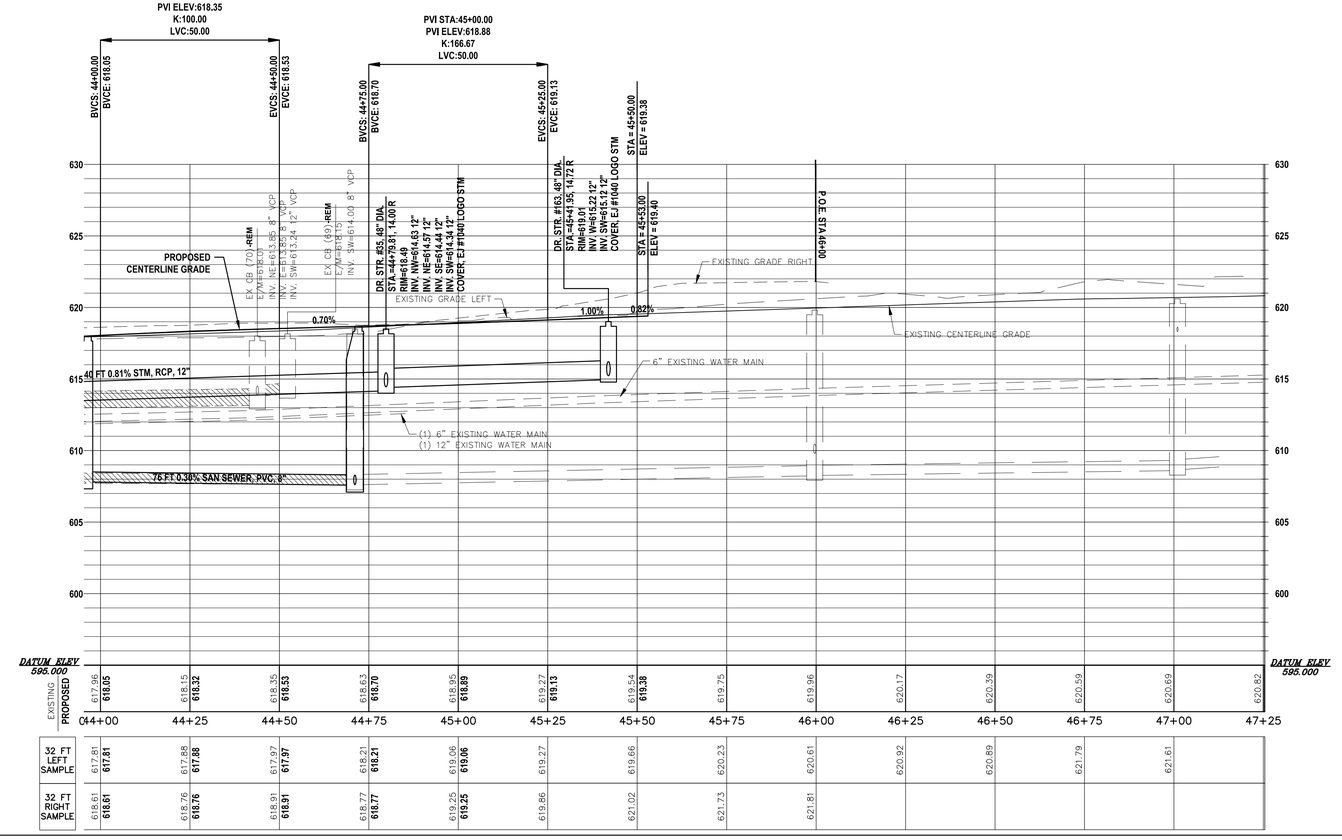

Road Work and Storm Sewer Item Description	Unit	Sht 27 Quantity
Roadway Grading	Sta	2.00
Subgrade Undercutting, Type, II	Cyd	50
Subbase, CIP	Cyd	295
Aggregate Base, 21AA, 8 inch	Syd	885
HMA, 4E3	Ton	150
HMA, 5E3	Ton	80
Sidewalk, 4 inch	Sft	640
Sidewalk Ramp, 6 inch	Sft	170
Detectable Warning Surface, Cast Iron	Ft	10
Curb & Gutter, Conc., Det F4	Ft	375
Driveway Opening, Conc., Det M	Ft	55
Driveway, Nonreinf. Conc., 6 inch	Syd	150
Structure, Stm. MH, 48 inch Dia.	Ea	1
Structure, Stm. CB, 24 inch Dia.	Ea	3
Structure, Stm. CB, 48 inch Dia.	Ea	1
Structure Cover, EJ #1040 Logo Stm	Ea	1
Structure Cover, EJ #5100	Ea	1
Structure Cover, EJ #7045	Ea	3
Stm. Sewer, RCP, 12 inch	Ft	200
Stm. Sewer Service, 6 inch	Ft	20
Stm. Sewer Service, Cleanout	Ea	1
Underdrain, Subbase, 6 inch	Ft	400

HATCH LEGEND

- DRIVEWAY, NONREINF. CONC., 6 INCH
- SIDEWALK, 4 INCH
- SIDEWALK RAMP, 6 INCH
- PROFILE STRUCTURE & PIPE REMOVALS
- DETECTABLE WARNING SURFACE, CAST IRON
- PLAN SEWER REMOVALS
- FILL ABANDONED UTILITY
- HAND PATCHING

ESTIMATED DRIVEWAY QUANTITIES THIS SHEET	
STATION	DRIVEWAY, NONREINF. CONC., 6 INCH (SYD)
44+09 R	29
44+18 L	35
44+31 R	29
45+30 L	57

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

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CITY OF SOUTH HAVEN
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SHEET TITLE:
NORTH SHORE DRIVE
ROAD WORK AND STORM SEWER
PLAN AND PROFILE
STA. 44+00 TO 46+00

DRAWN BY: GNF
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14-0890

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27 of 51

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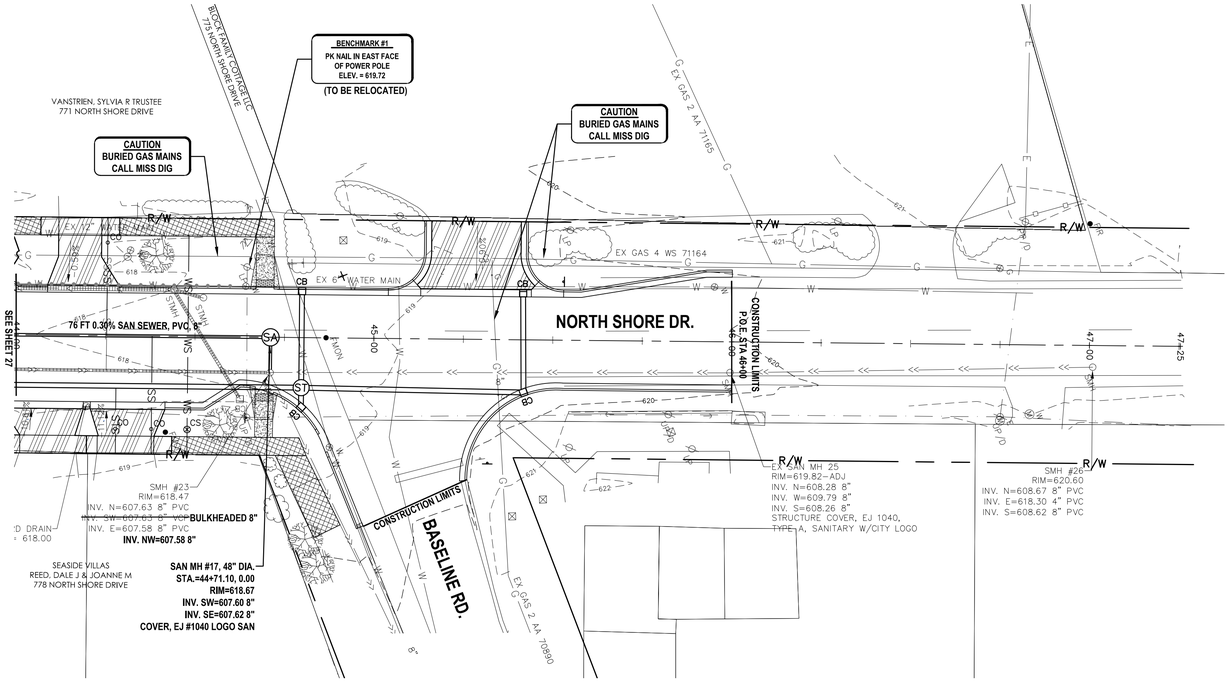
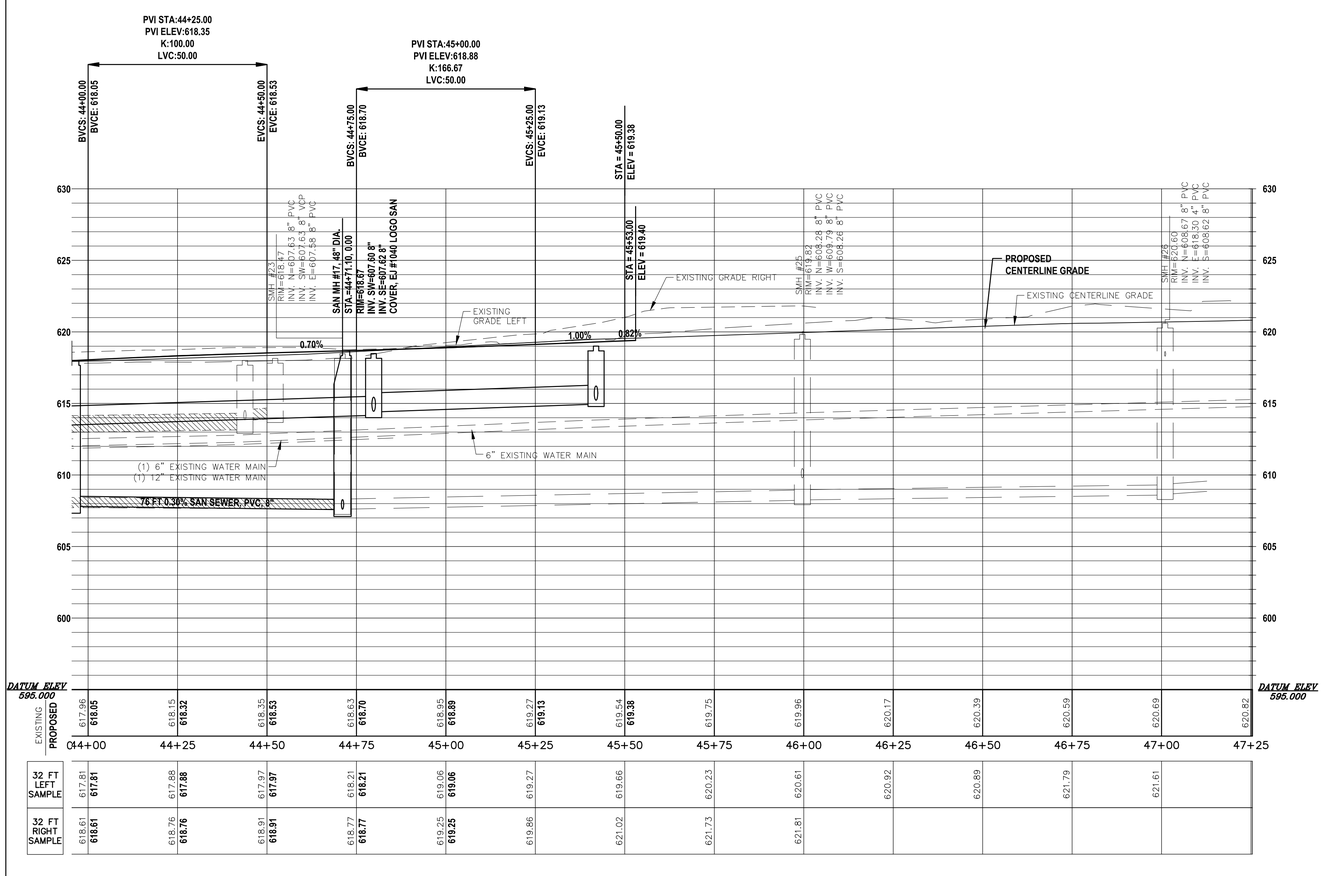


Water and Sanitary Sewer Item Description	Unit	Sht 28 Quantity
Structure, San. MH, 48 inch Dia.	Ea	1
Structure Cover, EJ #1040 Logo San	Ea	1
Structure Tap, 8 inch, Sanitary	Ea	1
Water Service, 1 inch	Ft	65
Curb Stop, 1 inch	Ea	1
San. Sewer, PVC SDR 26, 8 inch	Ft	90
San. Sewer Service, 6 inch	Ft	66
San. Sewer Service, Cleanout	Ea	2

HATCH LEGEND

- DRIVEWAY, NONREINF. CONC., 6 INCH
- SIDEWALK, 4 INCH
- SIDEWALK RAMP, 6 INCH
- PROFILE STRUCTURE & PIPE REMOVALS
- DETECTABLE WARNING SURFACE, CAST IRON
- PLAN SEWER REMOVALS
- FILL ABANDONED UTILITY
- HAND PATCHING



GRAPHIC SCALE

20 0 10 20 40 80

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1 inch = 20 ft.

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PROJECT:
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SHEET TITLE:
NORTH SHORE DRIVE
WATER AND SANITARY SEWER
PLAN AND PROFILE
STA. 44+00 TO 46+00

DRAWN BY: SCR
DESIGNED BY: CAK/SPJ/LT
PM REVIEW: TRD
QA/QC REVIEW:
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28 of 51

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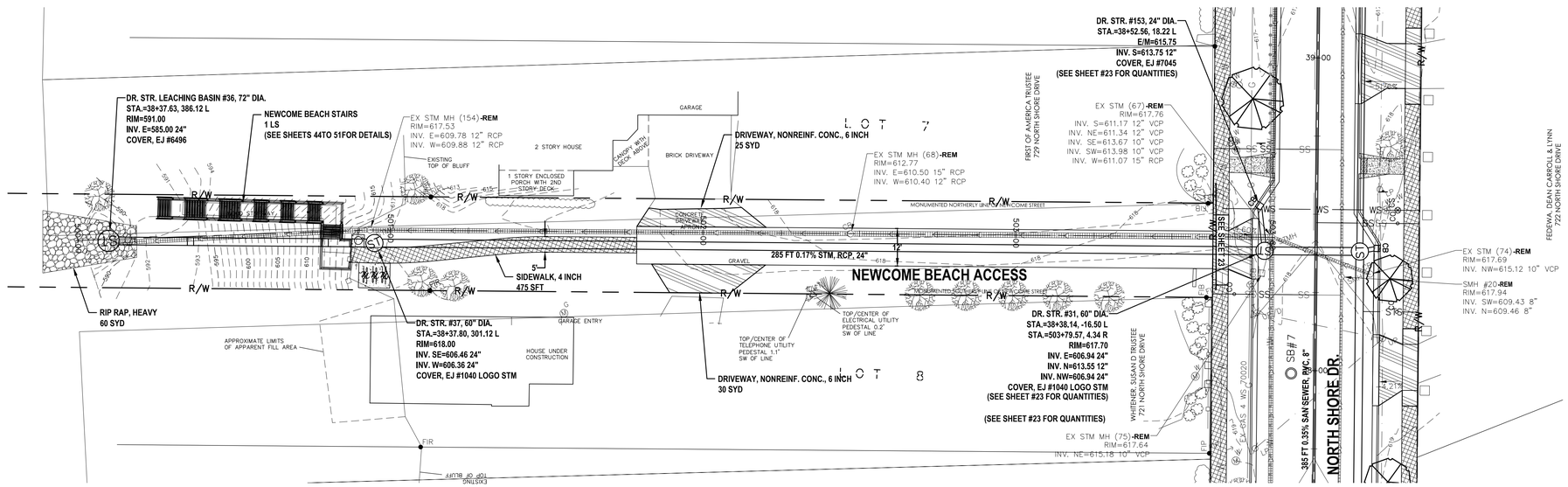
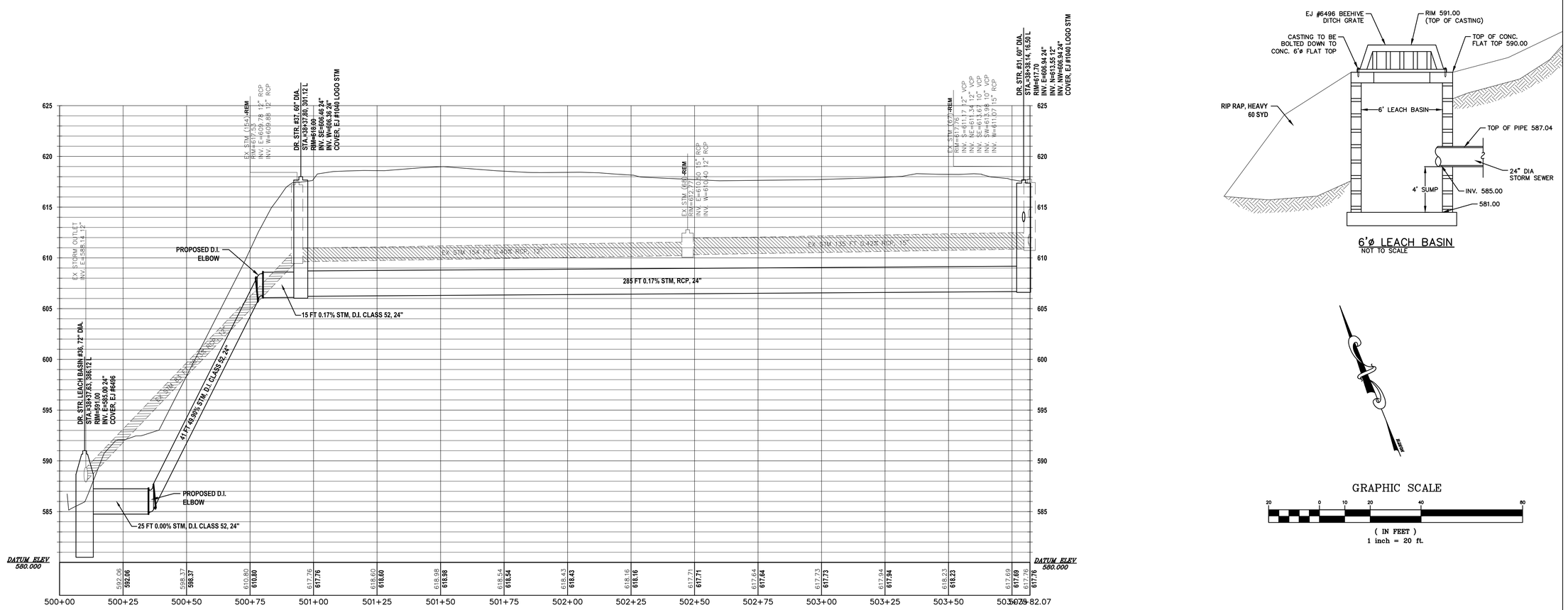


Item Description	Unit	Sht 29 Quantity
Newcome Beach Staircase	LS	1
Roadway Grading	Sta	2.00
Subgrade Undercutting, Type, II	Cyd	50
Rip Rap, Heavy	Cyd	60
Subbase, CIP	Cyd	90
Aggregate Base, 21AA, 8 inch	Syd	270
HMA, 4E3	Ton	30
HMA, 5E3	Ton	30
Sidewalk, 4 inch	Sft	475
Driveway, Nonreinf. Conc., 6 inch	Syd	55
Structure, Stm. MH, 60 inch Dia.	Ea	1
Structure Cover, EJ #1040 Logo Stm	Ea	1
Structure Cover, EJ #6496	Ea	1
Structure, Stm. Leaching MH, 72 inch Dia.	Ea	1
Stm. Sewer, RCP, 24 inch	Ft	285
Stm. Sewer, DI, 24 inch	Ft	85

HATCH LEGEND

- DRIVEWAY, NONREINF. CONC., 6 INCH
- SIDEWALK, 4 INCH
- SIDEWALK RAMP, 6 INCH
- PROFILE STRUCTURE & PIPE REMOVALS
- DETECTABLE WARNING SURFACE, CAST IRON
- PLAN SEWER REMOVALS
- FILL ABANDONED UTILITY
- HAND PATCHING



6'ø LEACH BASIN
NOT TO SCALE

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

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PROJECT:

NORTH SHORE DRIVE RECONSTRUCTION PROJECT CITY OF SOUTH HAVEN VAN BUREN COUNTY, MI

SHEET TITLE:

NEWCOME PLAN & PROFILE STA 500+00 TO 503+75

DRAWN BY: SPJ/SCR

DESIGNED BY: CAK/SPJ/LT

PM REVIEW: TRD

QA/QC REVIEW:

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29 of 51

NO.	REVISION DESCRIPTION:	BY:	DATE:

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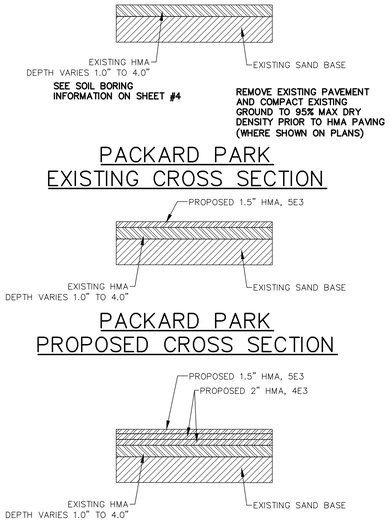
Item Description	Unit	Sht 30 Quantity
Cold Milling HMA Surface	Syd	3300
HMA, 4E3	Ton	16
HMA, 5E3	Ton	285
Pavt. Mrkg, Waterborne, 4 inch, White	Ft	2750
Pavt. Mrkg., Ovly. Cold Plastic, Thru Arrow Sym.	Ea	6

NOTE:
PARKING SPACE NUMBERING TO BE INCLUDED IN PAVT, MRKG, WATERBORNE, 4 INCH, WHITE FOR PAYMENT PURPOSES.

HATCH LEGEND

- DRIVEWAY, NONREINF. CONC., 6 INCH
- SIDEWALK, 4 INCH
- SIDEWALK RAMP, 6 INCH
- PROFILE STRUCTURE & PIPE REMOVALS
- DETECTABLE WARNING SURFACE, CAST IRON
- PLAN SEWER REMOVALS
- HAND PATCHING
- FILL ABANDONED UTILITY



PACKARD PARK
EXISTING CROSS SECTION

PACKARD PARK
PROPOSED CROSS SECTION

PACKARD PARK
PROPOSED APPROACH REBUILD

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

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CITY OF SOUTH HAVEN
VAN BUREN COUNTY, MI

SHEET TITLE:
PACKARD PARK
PLAN VIEW

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14-0890

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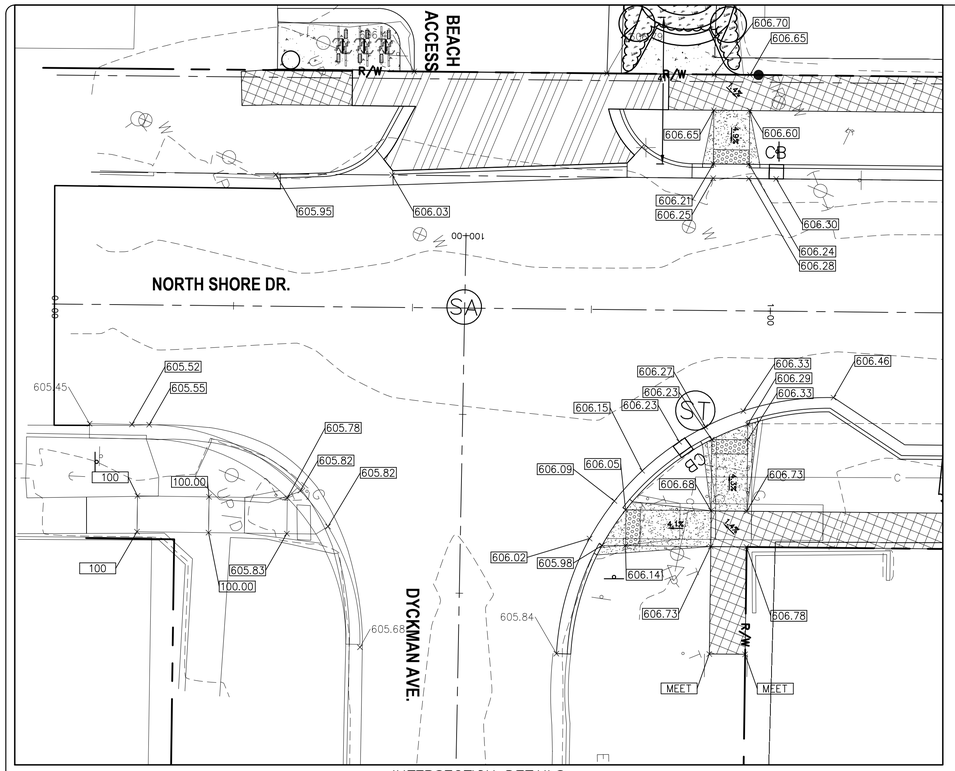
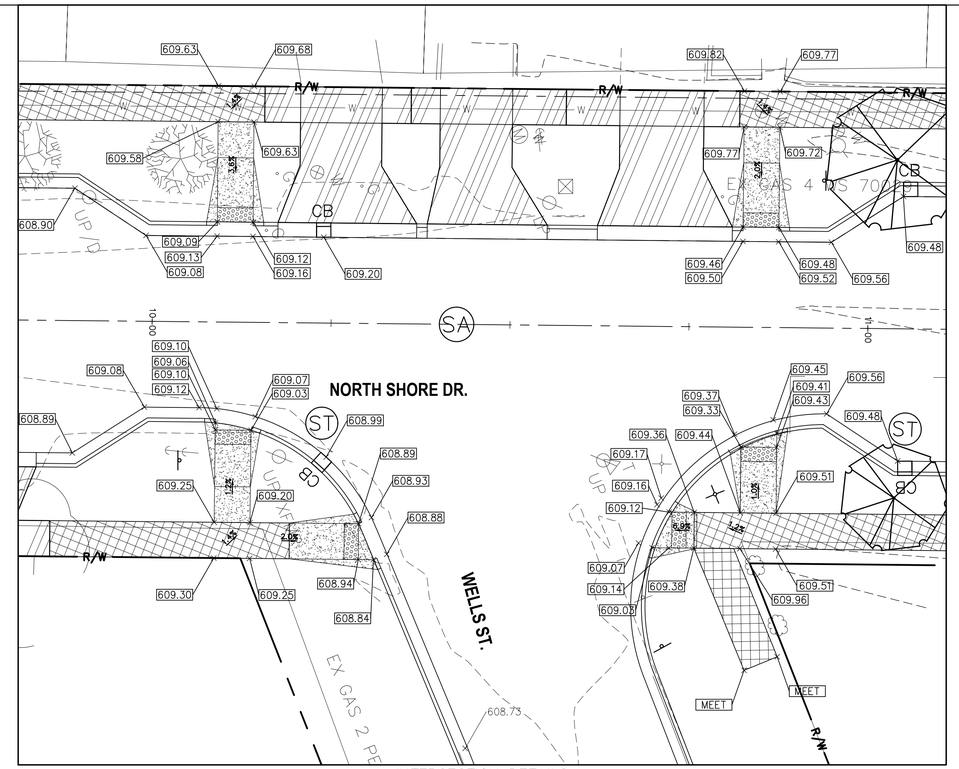
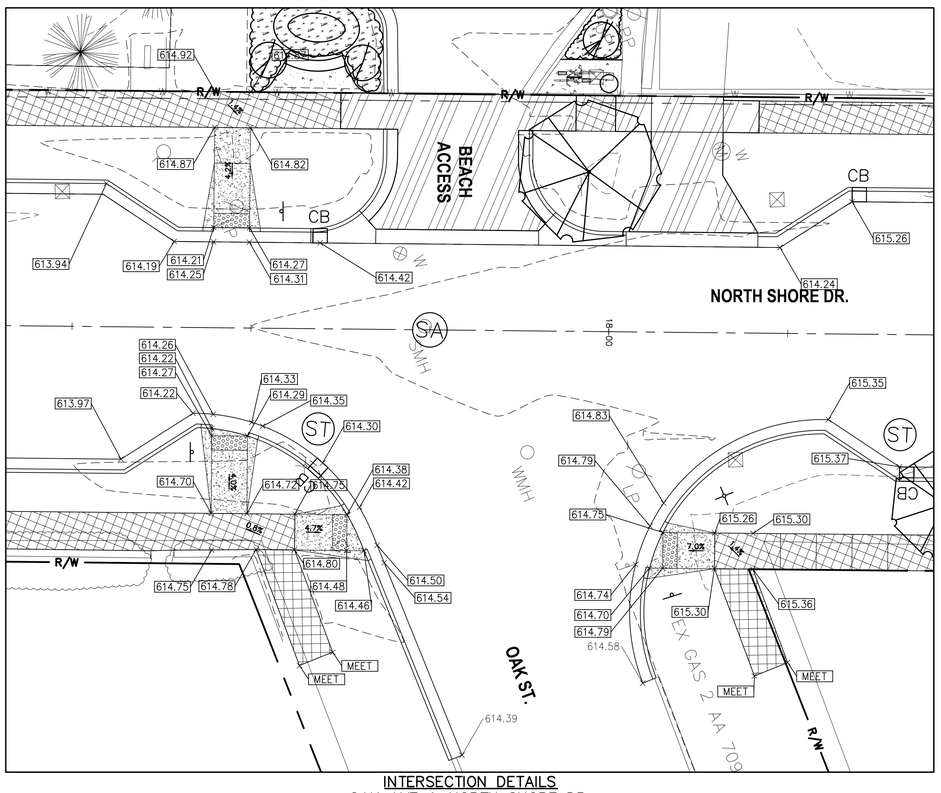
30 of 51



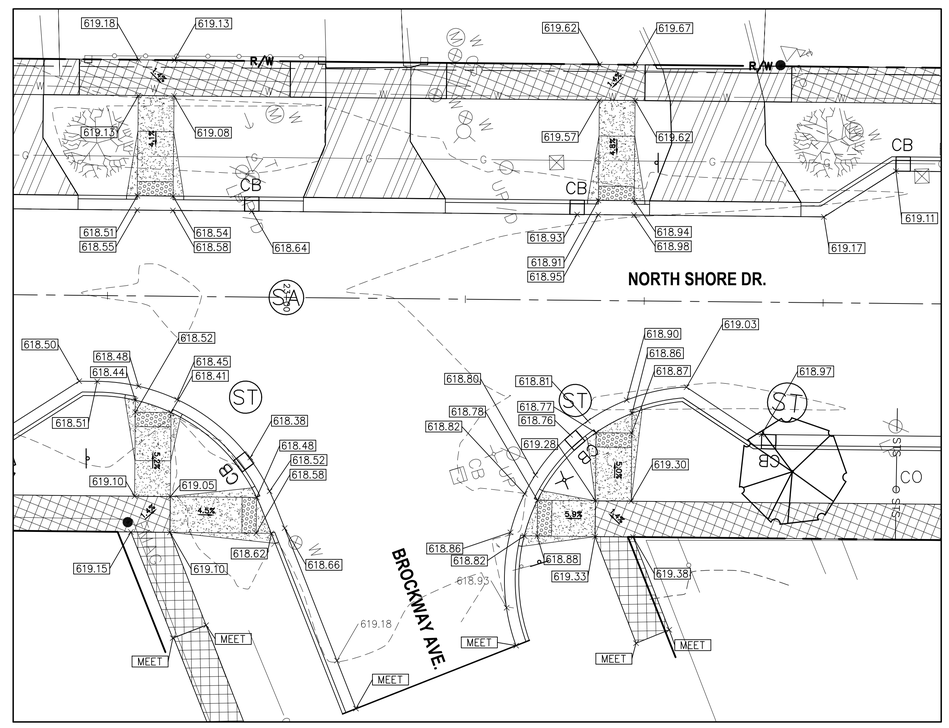
INTERSECTION DETAILS
DYCKMAN AVE & NORTH SHORE DR.



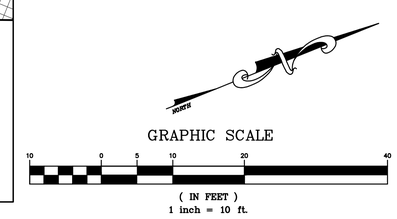
INTERSECTION DETAILS
WELLS ST. & NORTH SHORE DR.



INTERSECTION DETAILS
OAK AVE & NORTH SHORE DR.



INTERSECTION DETAILS
BROCKWAY AVE. & NORTH SHORE DR.



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CITY OF SOUTH HAVEN
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SHEET TITLE:
NORTH SHORE DRIVE
INTERSECTION DETAILS - 1

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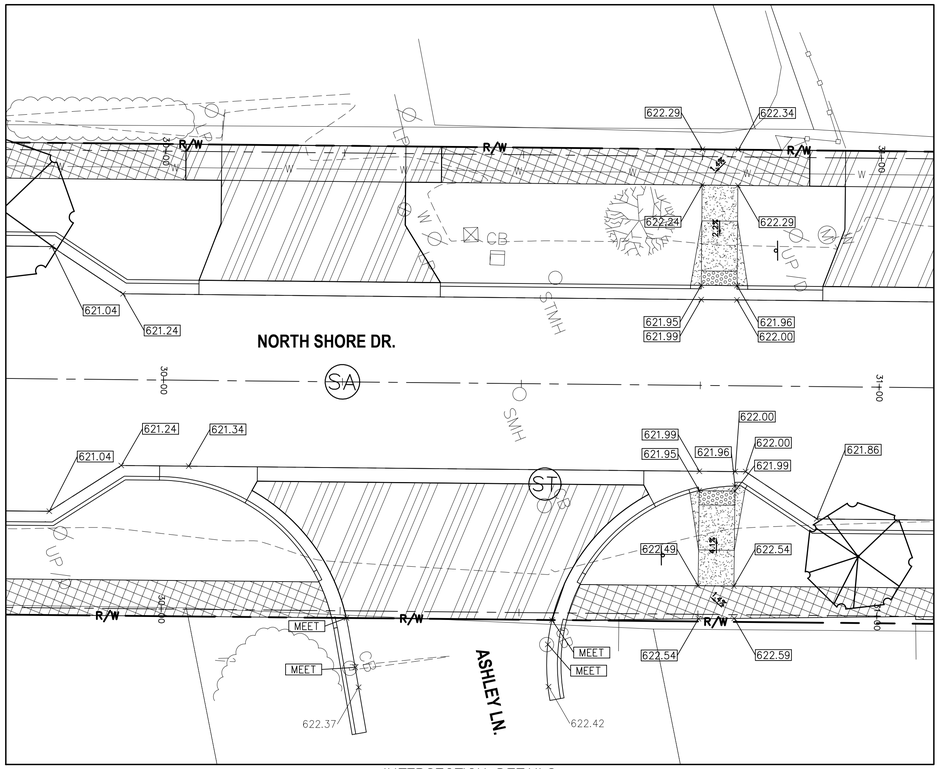
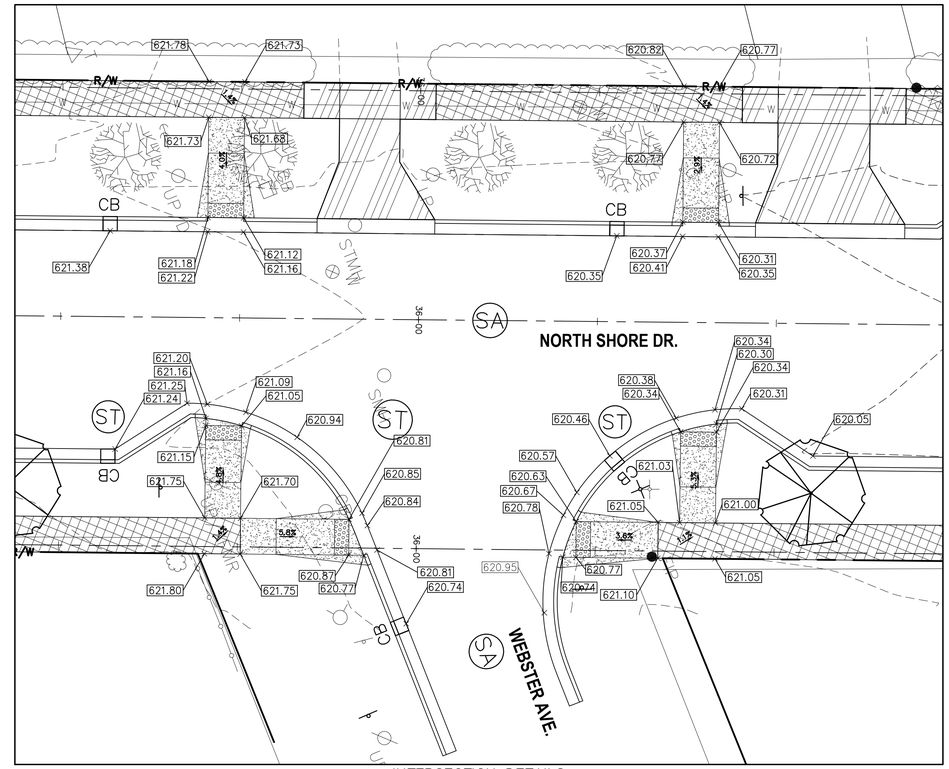
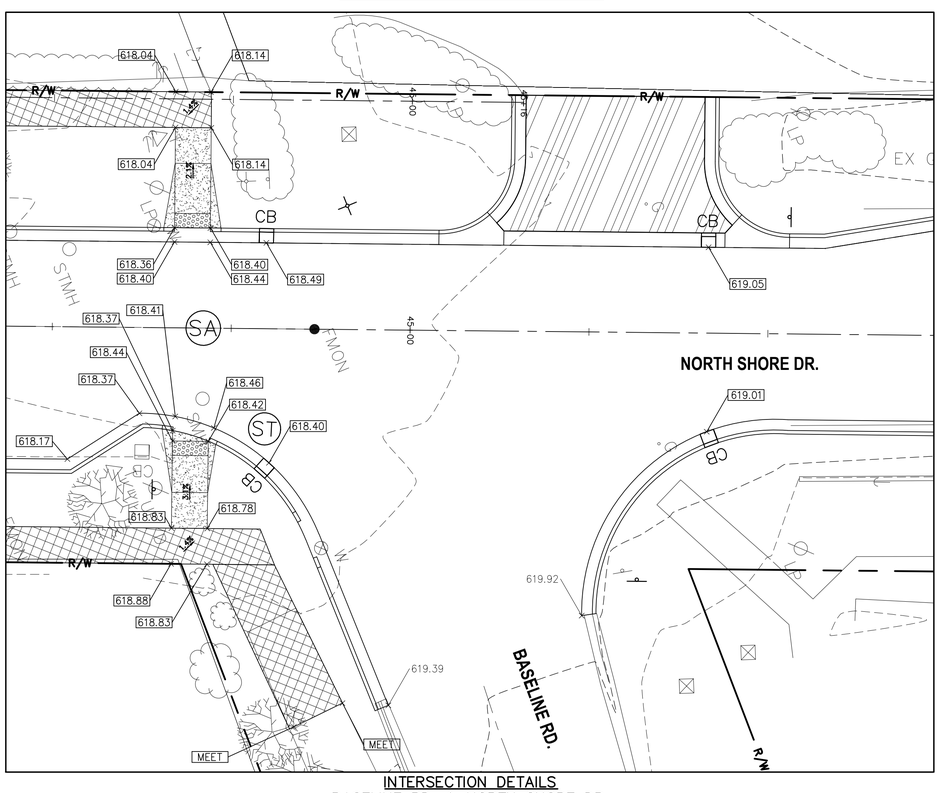
SHEET NO.
31 of 51



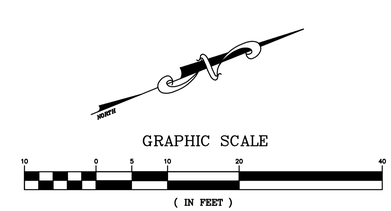
INTERSECTION DETAILS
ASHLEY LN. & NORTH SHORE DR.



INTERSECTION DETAILS
WEBSTER AVE. & NORTH SHORE DR.



INTERSECTION DETAILS
BASELINE RD. & NORTH SHORE DR.



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CITY OF SOUTH HAVEN
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SHEET TITLE:
NORTH SHORE DRIVE
INTERSECTION DETAILS - 2

DRAWN BY: SPJ/SCR
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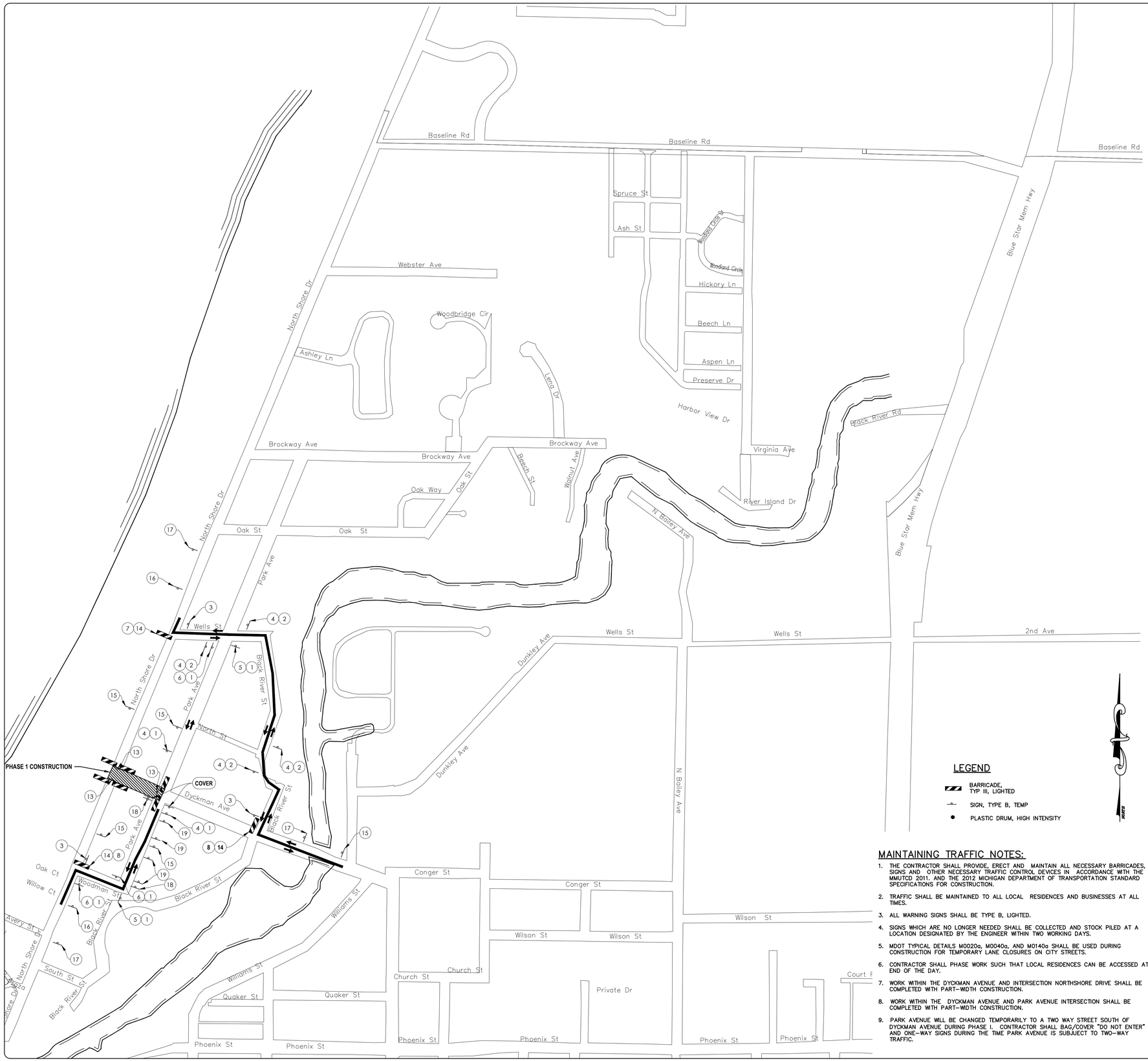

Item Description	Unit	Sht 33 Quantity
Temporary Traffic Control	LS	1

Estimated Schedule of Materials		
Sign, Type B, Temp, Prismatic, Furn	Sft	454
Sign, Type B, Temp, Prismatic, Oper	Sft	454
Barricade, Type III, High Intensity, Furn	Ea	10
Barricade, Type III, High Intensity, Oper	Ea	10
Plastic Drum, High Intensity, Furn	Ea	50
Plastic Drum, High Intensity, Oper	Ea	50
Traf Regulator Control	LS	1
Minor Traf Devices	LS	1
Lighted Arrow, Type B, Furn	Ea	2
Lighted Arrow, Type B, Oper	Ea	2
Sign Cover	Ea	2

PHASE 1
ESTIMATED SIGN, TYPE B, TEMPORARY PLAN QUANTITIES

	SYMBOL	LABEL	DIMENSION (FT)	AREA (SFT)	QUANTITY PHASE 1 (EA)	QUANTITY PHASE 2 (EA)	QUANTITY PHASE 3 (EA)	MAXIMUM QUANTITY (SFT)
1	NORTH SHORE DR.	D3–1	2' x 0.5'	1.0	0	12	23	23.0
2	DYCKMAN AVE.	D3–1	2' x 0.5'	1.0	4	0	0	4.0
3	END DETOUR	M4–8a	2' x 1.5'	3.0	2	2	2	6.0
4	DETOUR	M4–9	2.5' x 2'	5.0	4	5	9	45.0
5	DETOUR	M4–9L	2.5' x 2'	5.0	0	3	9	45.0
6	DETOUR	M4–9R	2.5' x 2'	5.0	0	3	6	30.0
7	DETOUR	M4–10L	4' x 1.5'	6.0	1	1	1	6.0
8	DETOUR	M4–10R	4' x 1.5'	6.0	2	1	1	12.0
9	TRAFFIC FINES DOUBLED IN WORK ZONES	R5–18	4' x 5'	20.0	0	0	0	0.0
10	INJURE/ KILL A WORKER $7500 + 15 YEARS	R5–18b	4' x 5'	20.0	0	0	0	0.0
11	WORK ZONE BEGINS	R5–18c	4' x 4'	16.0	0	0	0	0.0
12	SIDEWALK CLOSED	R9–9	2' x 1'	2.0	0	0	0	0.0
13	ROAD CLOSED	R11–2	4' x 2.5'	10.0	3	4	2	40.0
14	ROAD CLOSED TO THRU TRAFFIC	R11–4	5' x 2.5'	12.5	3	2	1	37.5
15	ROAD WORK AHEAD	W20–1	4' x 4'	16	5	0	3	80.00
16	DETOUR AHEAD	W20–2	4' x 4'	16	2	3	2	48.0
17	ROAD CLOSED AHEAD	W20–3	4' x 4'	16	3	3	2	48.0
18		W6–3	3' x 3'	9	2	0	0	18.0
19	P	R8–3a	1' x 1'	1	4	11	0	11.0
	N. SHORE DR. CLOSED AT BROCKWAY AVE	R11–3 (MOD)	5' x 2.5'	12.5	0	0	1	12.5
				TOTAL SIGNAGE (SFT)				453.50

LEGEND

- BARRICADE, TYP III, LIGHTED
- SIGN, TYPE B, TEMP
- PLASTIC DRUM, HIGH INTENSITY

MAINTAINING TRAFFIC NOTES:

1. THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN ALL NECESSARY BARRICADES, SIGNS AND OTHER NECESSARY TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH THE MMUTCD 2011. AND THE 2012 MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION.
2. TRAFFIC SHALL BE MAINTAINED TO ALL LOCAL RESIDENCES AND BUSINESSES AT ALL TIMES.
3. ALL WARNING SIGNS SHALL BE TYPE B, LIGHTED.
4. SIGNS WHICH ARE NO LONGER NEEDED SHALL BE COLLECTED AND STOCK PILED AT A LOCATION DESIGNATED BY THE ENGINEER WITHIN TWO WORKING DAYS.
5. MDOT TYPICAL DETAILS M0020a, M0040a, AND M0140a SHALL BE USED DURING CONSTRUCTION FOR TEMPORARY LANE CLOSURES ON CITY STREETS.
6. CONTRACTOR SHALL PHASE WORK SUCH THAT LOCAL RESIDENCES CAN BE ACCESSED AT END OF THE DAY.
7. WORK WITHIN THE DYCKMAN AVENUE AND INTERSECTION NORTHSHORE DRIVE SHALL BE COMPLETED WITH PART–WIDTH CONSTRUCTION.
8. WORK WITHIN THE DYCKMAN AVENUE AND PARK AVENUE INTERSECTION SHALL BE COMPLETED WITH PART–WIDTH CONSTRUCTION.
9. PARK AVENUE WILL BE CHANGED TEMPORARILY TO A TWO WAY STREET SOUTH OF DYCKMAN AVENUE DURING PHASE I. CONTRACTOR SHALL BAG/COVER "DO NOT ENTER" AND ONE–WAY SIGNS DURING THE TIME PARK AVENUE IS SUBJUECT TO TWO–WAY TRAFFIC.

GRAPHIC SCALE

300 0 150 300 600 1200

(IN FEET)
1 inch = 300 ft.

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PROJECT:
NORTH SHORE DRIVE RECONSTRUCTION PROJECT CITY OF SOUTH HAVEN VAN BUREN COUNTY, MI

SHEET TITLE:
TRAFFIC MAINTENANCE PLAN - 1

DRAWN BY: AS/AM
DESIGNED BY: CAK/SPJ/LT
PM REVIEW: TRD
QA/QC REVIEW:
DATE: MAY 2016
SEAL:

SIGNATURE:
DATE:

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SCALE:
HORZ: 1"=3000'
VERT: N/A

ACI JOB #
14-0890

SHEET NO.
33 of 51

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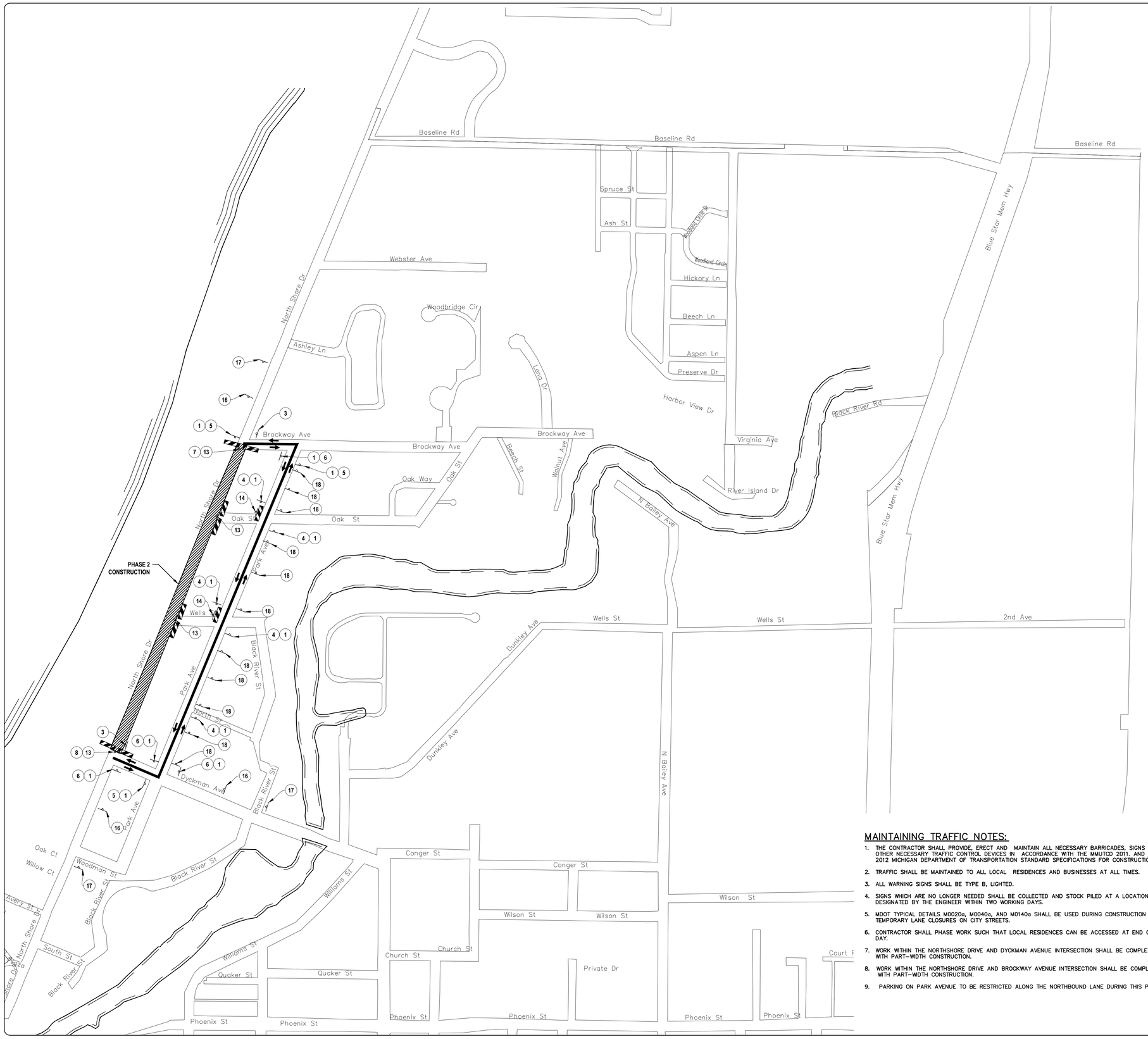

PHASE 2
ESTIMATED SIGN, TYPE B, TEMPORARY PLAN QUANTITIES

	SYMBOL	LABEL	DIMENSION (FT)	AREA (SFT)	QUANTITY (EA)	MAXIMUM QUANTITY (SFT)
1	NORTH SHORE DR.	D3–1	2' x 0.5'	1.0	12	12.0
2	DYCKMAN AVE.	D3–1	2' x 0.5'	1.0	0	0.00
3	END DETOUR	M4–8a	2' x 1.5'	3.0	2	6.0
4	DETOUR	M4–9	2.5' x 2'	5.0	5	25.0
5	DETOUR	M4–9L	2.5' x 2'	5.0	3	15.0
6	DETOUR	M4–9R	2.5' x 2'	5.0	3	15.0
7	DETOUR	M4–10L	4' x 1.5'	6.0	1	6.0
8	DETOUR	M4–10R	4' x 1.5'	6.0	1	6.0
9	TRAFFIC FINES DOUBLED IN WORK ZONES	R5–18	4' x 5'	20.0	0	0.0
10	INJURE/ KILL A WORKER $7500 + 15 YEARS	R5–18b	4' x 5'	20.0	0	0.0
11	WORK ZONE BEGINS	R5–18c	4' x 4'	16.0	0	0.0
12	SIDEWALK CLOSED	R9–9	2' x 1'	2.0	0	0.00
13	ROAD CLOSED	R11–2	4' x 2.5'	10.0	4	40.0
14	ROAD CLOSED TO THRU TRAFFIC	R11–4	5' x 2.5'	12	2	24.0
15	ROAD WORK AHEAD	W20–1	4' x 4'	16	0	0.00
16	DETOUR AHEAD	W20–2	4' x 4'	16	3	48.0
17	ROAD CLOSED AHEAD	W20–3	4' x 4'	16	3	48.0
18	R	R8–3a	1' x 1'	1	11	11.0
				TOTAL SIGNAGE (SFT)		256.00

MAINTAINING TRAFFIC NOTES:

1. THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN ALL NECESSARY BARRICADES, SIGNS AND OTHER NECESSARY TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH THE MMUTCD 2011. AND THE 2012 MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION.
2. TRAFFIC SHALL BE MAINTAINED TO ALL LOCAL RESIDENCES AND BUSINESSES AT ALL TIMES.
3. ALL WARNING SIGNS SHALL BE TYPE B, LIGHTED.
4. SIGNS WHICH ARE NO LONGER NEEDED SHALL BE COLLECTED AND STOCK PILED AT A LOCATION DESIGNATED BY THE ENGINEER WITHIN TWO WORKING DAYS.
5. MDOT TYPICAL DETAILS M0020a, M0040a, AND M0140a SHALL BE USED DURING CONSTRUCTION FOR TEMPORARY LANE CLOSURES ON CITY STREETS.
6. CONTRACTOR SHALL PHASE WORK SUCH THAT LOCAL RESIDENCES CAN BE ACCESSED AT END OF THE DAY.
7. WORK WITHIN THE NORTHSHORE DRIVE AND DYCKMAN AVENUE INTERSECTION SHALL BE COMPLETED WITH PART–WIDTH CONSTRUCTION.
8. WORK WITHIN THE NORTHSHORE DRIVE AND BROCKWAY AVENUE INTERSECTION SHALL BE COMPLETED WITH PART–WIDTH CONSTRUCTION.
9. PARKING ON PARK AVENUE TO BE RESTRICTED ALONG THE NORTHBOUND LANE DURING THIS PHASE.

LEGEND

- BARRICADE, TYP III, LIGHTED
- SIGN, TYPE B, TEMP
- PLASTIC DRUM, HIGH INTENSITY

NORTH

GRAPHIC SCALE

300 0 150 300 600 1200

(IN FEET)
1 inch = 300 ft.

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Portage, IN
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PROJECT:
NORTH SHORE DRIVE
RECONSTRUCTION PROJECT
CITY OF SOUTH HAVEN
VAN BUREN COUNTY, MI

SHEET TITLE:
TRAFFIC MAINTENANCE PLAN -2

DRAWN BY: AS/AM
DESIGNED BY: CAK/SPJ/LT
PM REVIEW: TRD
QA/QC REVIEW:
DATE: MAY 2016
SEAL:

SIGNATURE:
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SCALE:
HORZ: N/A
VERT: N/A

ACI JOB #
14-0890

SHEET NO.

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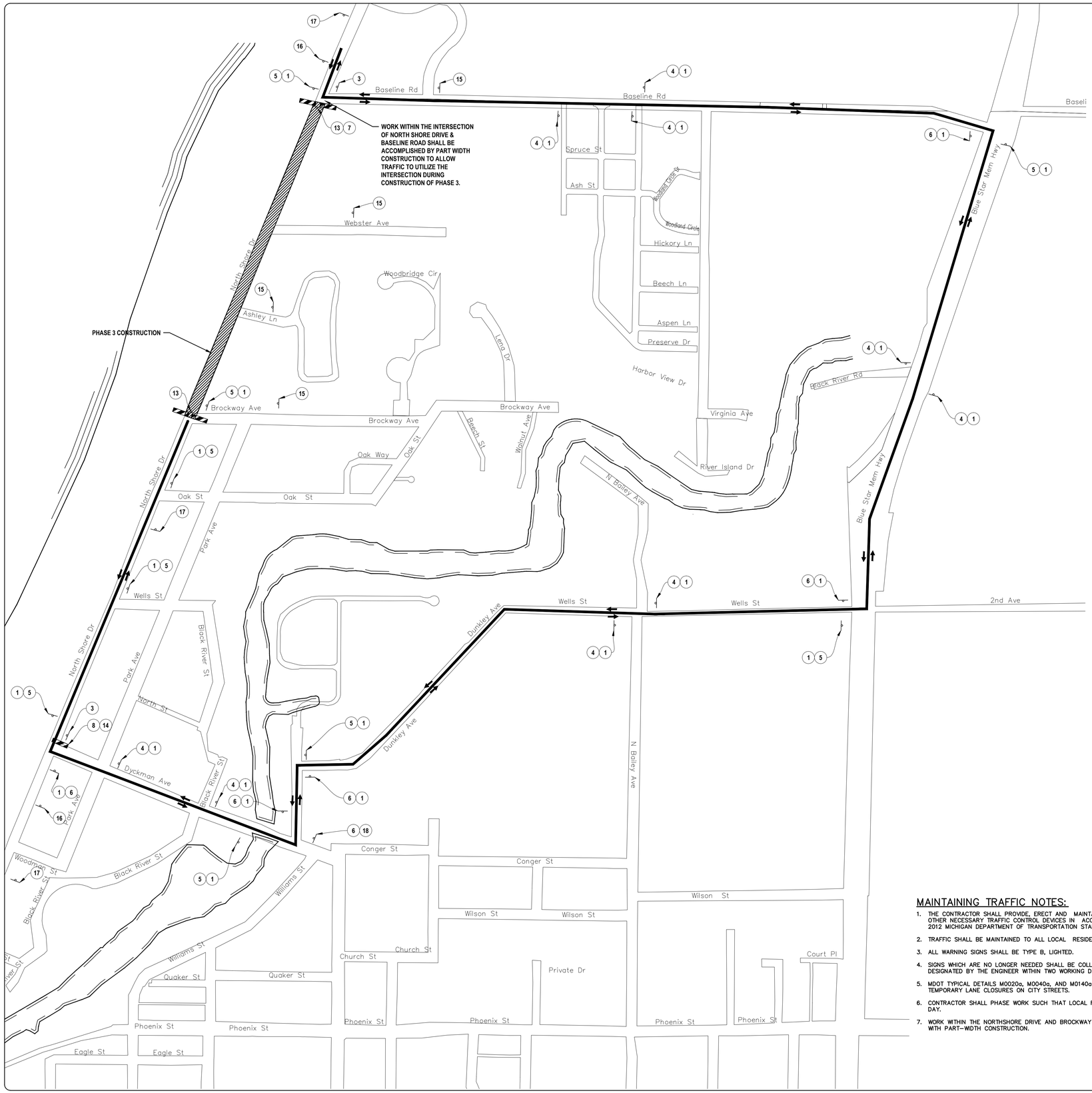

PHASE 3
ESTIMATED SIGN, TYPE B,
TEMPORARY PLAN QUANTITIES

	SYMBOL	LABEL	DIMENSION (FT)	AREA (SFT)	QUANTITY (EA)	MAXIMUM QUANTITY (SFT)
1	NORTH SHORE DR.	D3–1	2' x 0.5'	1.0	23	23.0
2	DYCKMAN AVE.	D3–1	2' x 0.5'	1.0	0	0.00
3	END DETOUR	M4–8a	2' x 1.5'	3.0	2	6.0
4	DETOUR	M4–9	2.5' x 2'	5.0	9	45.0
5	DETOUR	M4–9L	2.5' x 2'	5.0	9	45.0
6	DETOUR	M4–9R	2.5' x 2'	5.0	6	30.0
7	DETOUR	M4–10L	4' x 1.5'	6.0	1	6.0
8	DETOUR	M4–10R	4' x 1.5'	6.0	1	6.0
9	TRAFFIC FINES DOUBLED IN WORK ZONES	R5–18	4' x 5'	20.0	0	0.0
10	INJURE/ KILL A WORKER $7500 + 15 YEARS	R5–18b	4' x 5'	20.0	0	0.0
11	WORK ZONE BEGINS	R5–18c	4' x 4'	16.0	0	0.0
12	SIDEWALK CLOSED	R9–9	2' x 1'	2.0	0	0.00
13	ROAD CLOSED	R11–2	4' x 2.5'	10.0	2	20.0
14	ROAD CLOSED TO THRU TRAFFIC	R11–4	5' x 2.5'	12.5	1	12.5
15	ROAD WORK AHEAD	W20–1	4' x 4'	16	3	48.00
16	DETOUR AHEAD	W20–2	4' x 4'	16	2	32.0
17	ROAD CLOSED AHEAD	W20–3	4' x 4'	16	2	32.0
18	N. SHORE DR. CLOSED AT BROCKWAY AVE	R11–3 (MOD)	2.5' x 5'	12.5	1	12.5
				TOTAL SIGNAGE (SFT)		318.00

LEGEND

- BARRICADE, TYP III, LIGHTED
- SIGN, TYPE B, TEMP
- PLASTIC DRUM, HIGH INTENSITY

MAINTAINING TRAFFIC NOTES:

1. THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN ALL NECESSARY BARRICADES, SIGNS AND OTHER NECESSARY TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH THE MMUTCD 2011. AND THE 2012 MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION.
2. TRAFFIC SHALL BE MAINTAINED TO ALL LOCAL RESIDENCES AND BUSINESSES AT ALL TIMES.
3. ALL WARNING SIGNS SHALL BE TYPE B, LIGHTED.
4. SIGNS WHICH ARE NO LONGER NEEDED SHALL BE COLLECTED AND STOCK PILED AT A LOCATION DESIGNATED BY THE ENGINEER WITHIN TWO WORKING DAYS.
5. MDOT TYPICAL DETAILS M0020a, M0040a, AND M0140a SHALL BE USED DURING CONSTRUCTION FOR TEMPORARY LANE CLOSURES ON CITY STREETS.
6. CONTRACTOR SHALL PHASE WORK SUCH THAT LOCAL RESIDENCES CAN BE ACCESSED AT END OF THE DAY.
7. WORK WITHIN THE NORTHSHORE DRIVE AND BROCKWAY AVENUE INTERSECTION SHALL BE COMPLETED WITH PART–WIDTH CONSTRUCTION.

GRAPHIC SCALE

300 0 150 300 600 1200

(IN FEET)
1 inch = 300 ft.

NO.	REVISION DESCRIPTION:	BY:	DATE:

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F 269.927.1017
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PROJECT:
NORTH SHORE DRIVE
RECONSTRUCTION PROJECT
CITY OF SOUTH HAVEN
VAN BUREN COUNTY, MI

SHEET TITLE:
TRAFFIC MAINTENANCE PLAN - 3

DRAWN BY: AS/AM
DESIGNED BY: CAK/SPJ/LT
PM REVIEW: TRD
QA/QC REVIEW:
DATE: MAY 2016
SEAL:
SIGNATURE:
DATE:

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VERT: N/A

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14-0890

SHEET NO.
35 of 51

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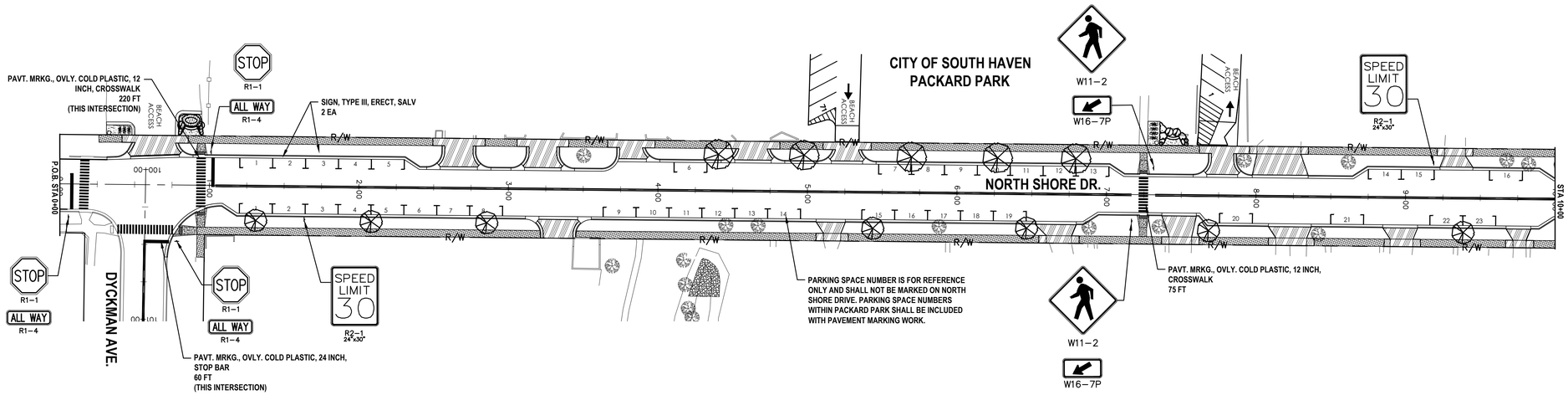
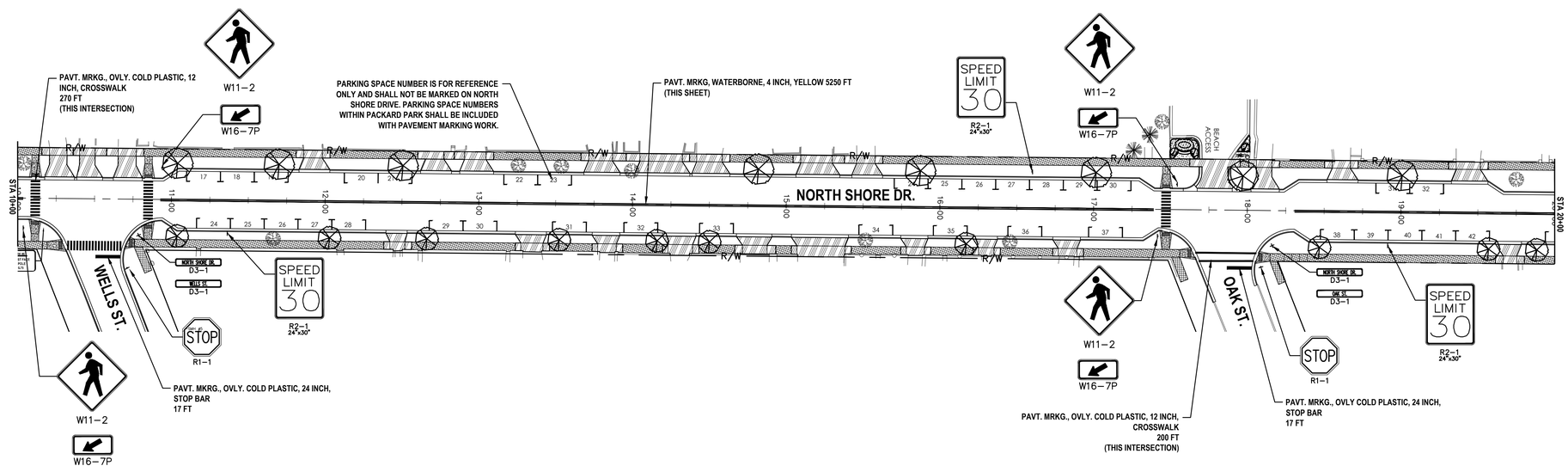
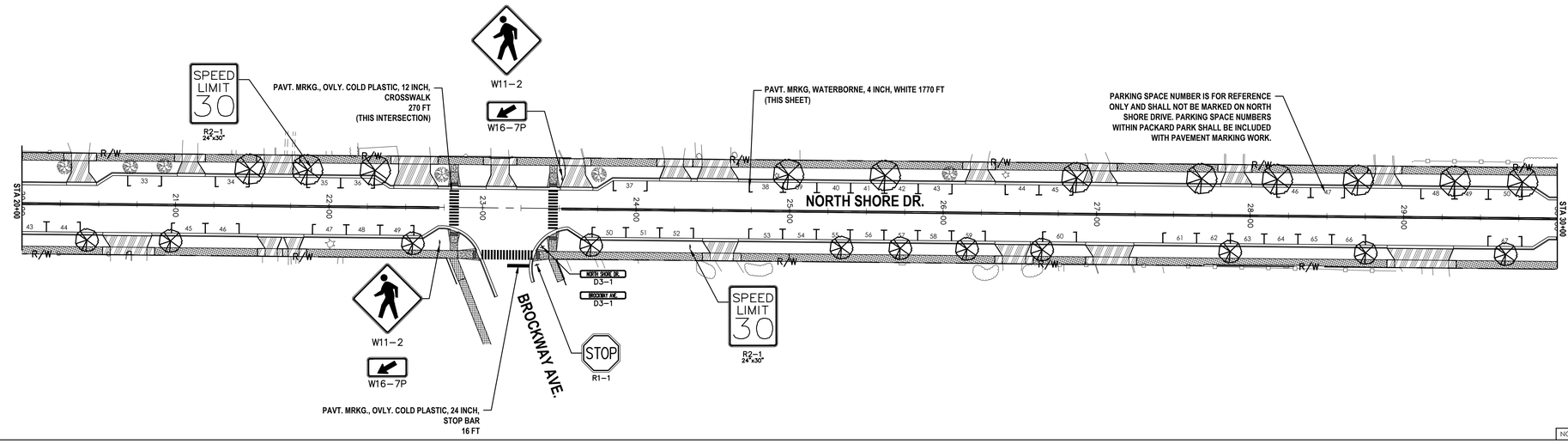
Item Description	Unit	Sht 36 Quantity
Post, Steel, U-Channel, 3 lb	Ea	24
Traffic Signs, Permanent	Sft	144
Sign, Type III, Erect, Salv	Ea	2
Pavt. Mrkg, Waterborne, 4 inch, White	Ft	1770
Pavt. Mrkg, Waterborne, 4 inch, Yellow	Ft	5250
Pavt. Mrkg., Ovly. Cold Plastic, 24 inch, Stop Bar	Ft	110
Pavt. Mrkg., Ovly. Cold Plastic, 12 inch, Crosswalk	Ft	1035







ESTIMATED SIGN QUANTITIES THIS SHEET

SYMBOL	LABEL	DIMENSION	AREA (SFT)	QUANTITY (EA)	MAXIMUM QUANTITY (SFT)
NORTH SHORE DR.	D3-1	36"x8"	2	3	6
WELLS ST.	D3-1	36"x8"	2	1	2
OAK ST.	D3-1	36"x8"	2	1	2
BROCKWAY AVE.	D3-1	36"x8"	2	1	2
STOP	R1-1	30"x30"	6.25	6	37.5
ALL WAY	R1-3P	18"x6"	0.75	3	2.25
SPEED LIMIT 30	R2-1	24"x30"	5	6	30
	W11-2	30"x30"	6.25	8	50
	W16-7P	24"x12"	2	6	12
				TOTAL SIGNAGE (SFT)	143.75

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

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PROJECT:
NORTH SHORE DRIVE
RECONSTRUCTION PROJECT
CITY OF SOUTH HAVEN
VAN BUREN COUNTY, MI

SHEET TITLE:
NORTH SHORE DRIVE
SIGNAGE PLAN AND
PAVEMENT MARKING

DRAWN BY: SPJ/SCR
DESIGNED BY: CAK/SPJ/LT
PM REVIEW: TRD
QA/QC REVIEW:
DATE: MAY 2016
SEAL:

SIGNATURE:
DATE:

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SCALE:
HORZ: 1"=40'
VERT: N/A

ACI JOB #
14-0890

SHEET NO.

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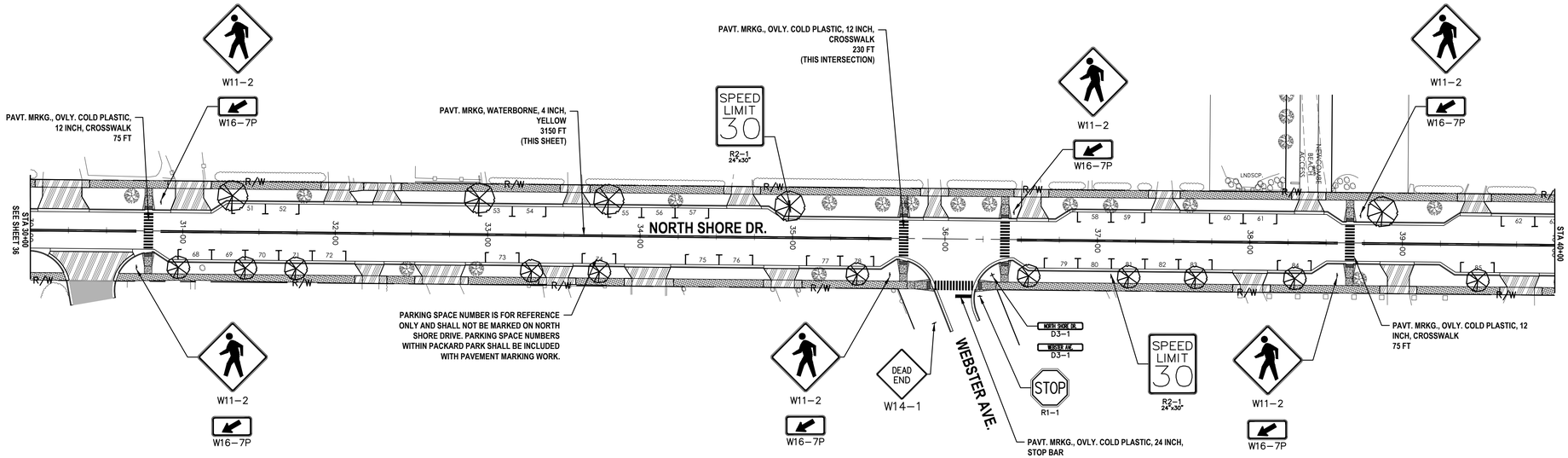
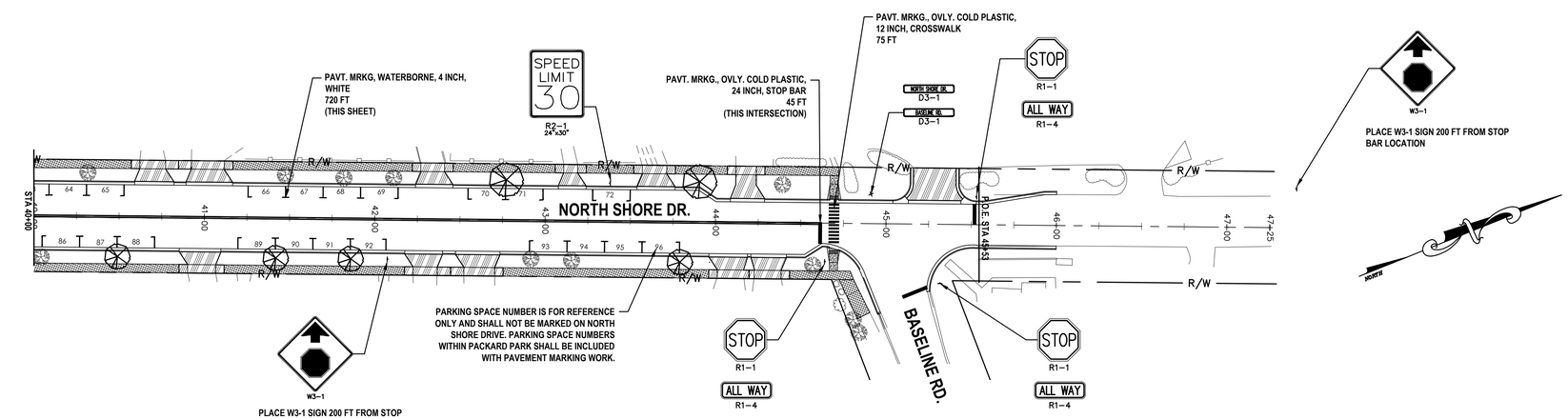
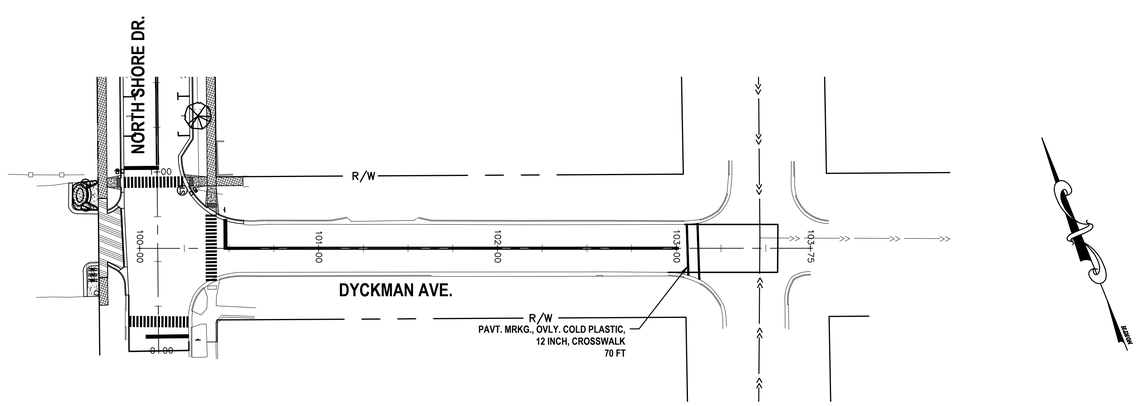


Item Description	Unit	Sht 37 Quantity
Post, Steel, U-Channel, 3 lb	Ea	18
Traffic Signs, Permanent	Sft	119
Pavt. Mrkg, Waterborne, 4 inch, White	Ft	720
Pavt. Mrkg, Waterborne, 4 inch, Yellow	Ft	3150
Pavt. Mrkg., Ovly. Cold Plastic, 24 inch, Stop Bar	Ft	57
Pavt. Mrkg., Ovly. Cold Plastic, 12 inch, Crosswalk	Ft	525





ESTIMATED SIGN QUANTITIES THIS SHEET

SYMBOL	LABEL	DIMENSION	AREA (SFT)	QUANTITY (EA)	MAXIMUM QUANTITY (SFT)
NORTH SHORE DR.	D3-1	36"x8"	2	2	4
BASELINE RD.	D3-1	36"x8"	2	1	2
WEBSTER AVE.	D3-1	36"x8"	2	1	2
STOP	R1-1	30"x30"	6.25	4	25
ALL WAY	R1-4	18"x6"	0.75	3	2.25
SPEED LIMIT 30	R2-1	24"x30"	5	3	15
	W3-1	30"x30"	6.25	2	12.5
	W11-2	30"x30"	6.25	6	37.5
DEAD END	W14-1	30"x30"	6.25	1	6.25
	W16-7P	24"x12"	2	6	12
				TOTAL SIGNAGE (SFT)	119

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

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PROJECT:
NORTH SHORE DRIVE
RECONSTRUCTION PROJECT
CITY OF SOUTH HAVEN
VAN BUREN COUNTY, MI

SHEET TITLE:
NORTH SHORE DRIVE
SIGNAGE PLAN AND
PAVEMENT MARKING

DRAWN BY: SPJ/SCR
DESIGNED BY: CAK/SPJ/LT
PM REVIEW: TRD
QA/QC REVIEW:
DATE: MAY 2016
SEAL:

SIGNATURE:
DATE:

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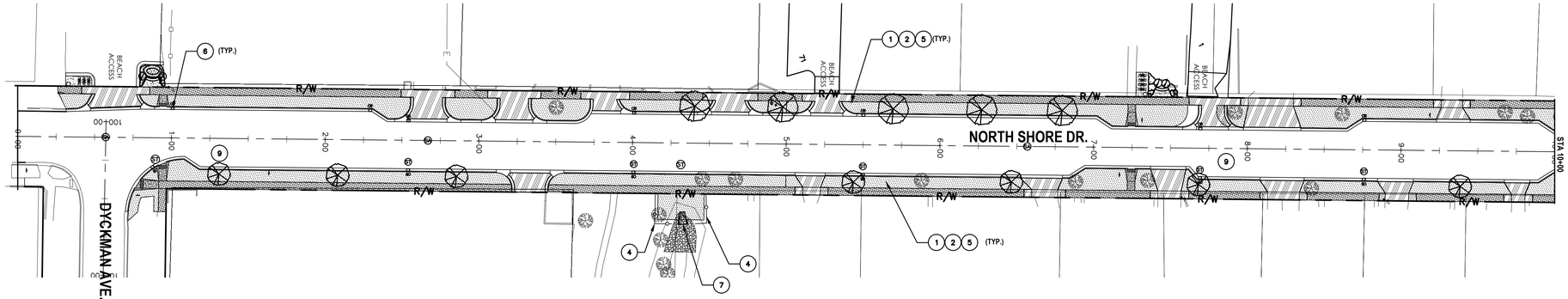
SCALE:
HORZ: 1"=40'
VERT: N/A

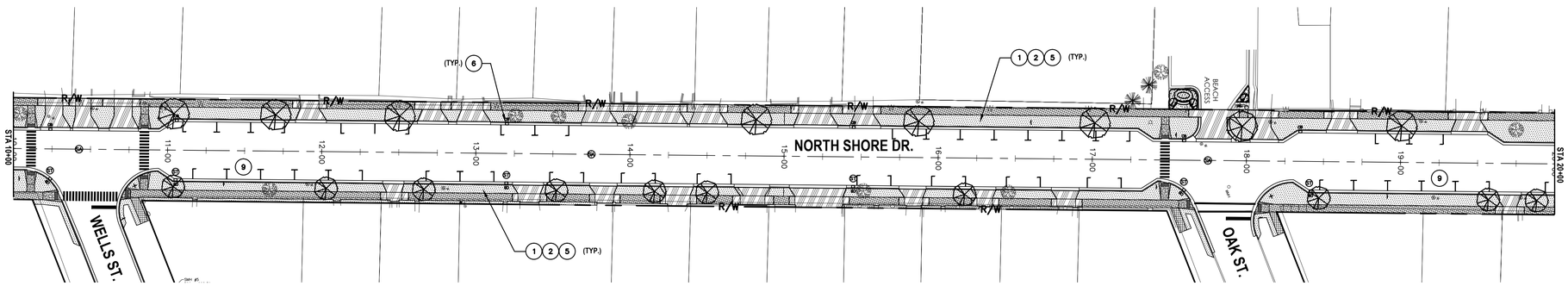
ACI JOB #
14-0890

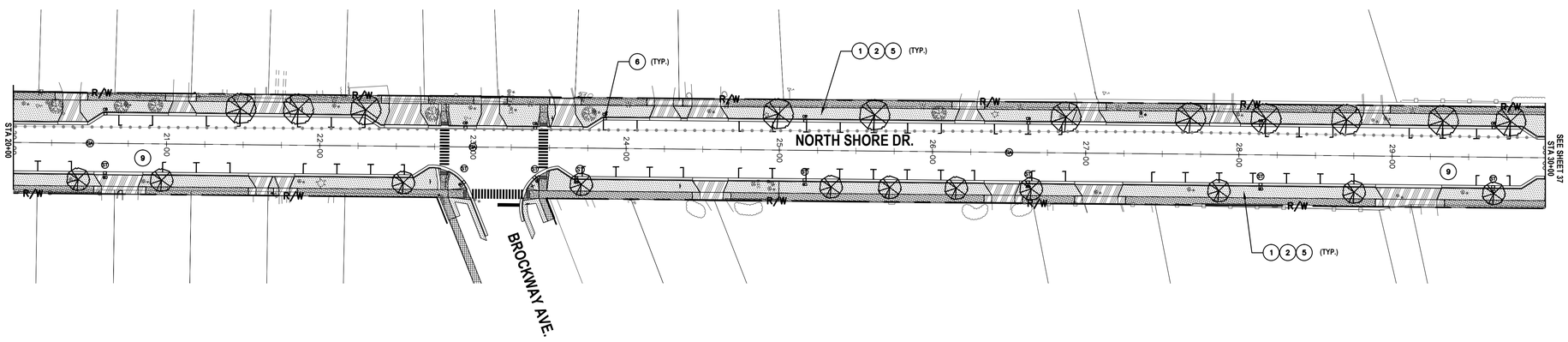
SHEET NO.
37 of 51

E:\CIVIL_3D\ENG_2014\14-0890 NORTH SHORE DRIVE\Dwg\14-0890 R1.dwg, J7, 5/9/2014 4:07:49 PM, ashorts, 1:1

Item Description	Unit	Sht 38 Quantity
Maintenance Gravel	Cyd	300
Silt Fence	Ft	500
Inlet Protection, Fabric Drop	Ea	45
Topsoil Surface, 4 inch, screened	Syd	4500
Seed & Fertilizer	Syd	4500
Mulch Blanket	Syd	4500







NOTES:

1. CONDUCT INSPECTIONS OF ALL TEMPORARY SOIL EROSION AND SEDIMENTATION CONTROLS WEEKLY AND FOLLOWING RAIN EVENTS THAT RESULT IN RUNOFF FROM THE SITE. NOTE DEFICIENCIES AND CORRECTIVE ACTION NEEDED. PROVIDE A REPORT OF THESE INSPECTIONS TO THE ENGINEER AND DOCUMENT THE DATE CORRECTIVE ACTION IS TAKEN.
2. MAINTAIN TEMPORARY SOIL EROSION AND SEDIMENTATION CONTROL MEASURES IN PROPER WORKING CONDITION FOR THE LIFE OF THE PROJECT UNTIL THE SITE HAS BEEN RESTORED.
3. CONDUCT SUPPLEMENTARY SEEDING/FERTILIZING PER SPECIFICATIONS TO CORRECT ISSUES ARISING FROM WEATHER DAMAGE, FILL IN BARE OR SPARSELY VEGETATED AREAS, AND ACHIEVE DENSE AND HEALTHY GRASS GROWTH.
4. AT THE ENGINEER'S SOLE DISCRETION, ADDITIONAL PAYMENT MAY BE MADE FOR SUPPLEMENTAL OR ADDITIONAL SEEDING/FERTILIZING AND MULCHING NECESSARY DUE TO CIRCUMSTANCES BEYOND THE CONTROL OF THE CONTRACTOR EXCEPT OR ARISING OUT OF EXTREME WEATHER SUCH AS FLOODING.

APPLICABLE SOIL EROSION AND SEDIMENTATION CONTROL MEASURES

KEY	DESCRIPTION
1	SELECTIVE GRADING AND SHAPING
2	PERMANENT/ TEMPORARY SEEDING
3	AGGREGATE COVER
4	GEOTEXTILE SILT FENCE
5	MULCHING AND MULCH ANCHORING
6	DROP INLET SEDIMENT TRAP
7	RIP RAP, HEAVY
8	SAND FENCE AND DUNE STABILIZATION
9	PAVEMENT

HATCH LEGEND

- MULCH BLANKET
- DRIVEWAY, NONREINF, CONC., 6 INCH
- SIDEWALK, 4 INCH
- SIDEWALK RAMP, 6 INCH
- DETECTABLE WARNING SURFACE, CAST IRON
- SILT FENCE

NORTH

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

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Portage, IN
PO Box 1267
Traverse City, MI 49685
T 269.927.1017
F 269.927.2295

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PROJECT:
NORTH SHORE DRIVE
RECONSTRUCTION PROJECT
CITY OF SOUTH HAVEN
VAN BUREN COUNTY, MI

SHEET TITLE:
NORTH SHORE DRIVE
SOIL EROSION CONTROL
AND SEDIMENTATION PLAN

DRAWN BY: SPJ/SCR
DESIGNED BY: CAK/SPJ/LT
PM REVIEW: TRD
QA/QC REVIEW:
DATE: MAY 2016
SEAL:

SIGNATURE:
DATE:

HARD COPY IS INTENDED TO BE 24" X 36" WHEN PLOTTED. SCALE(S) INDICATED AND GRAPHIC QUALITY MAY NOT BE ACCURATE FOR ANY OTHER SIZES

SCALE:
HORZ: 1"=40'
VERT: VERT

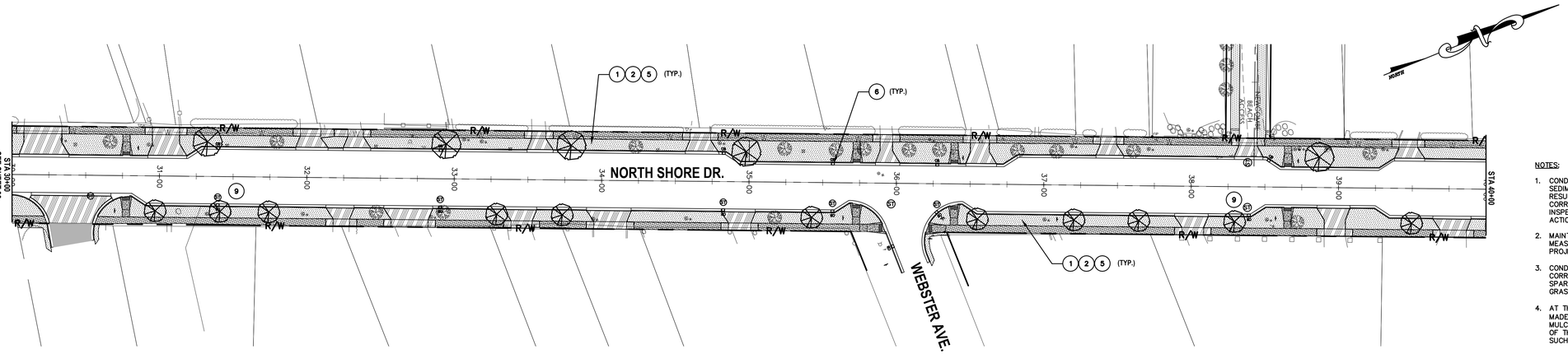
ACI JOB #
14-0890

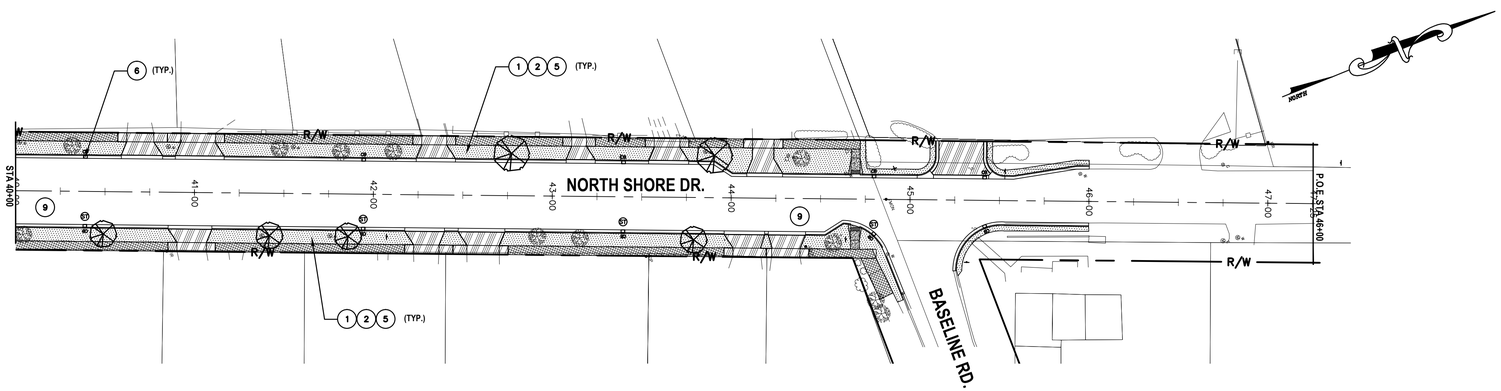
SHEET NO.
38 of 51

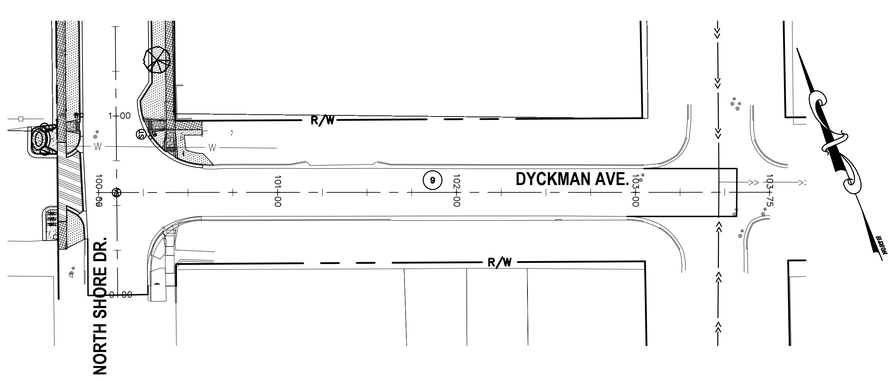
NO.	REVISION DESCRIPTION:	BY:	DATE:

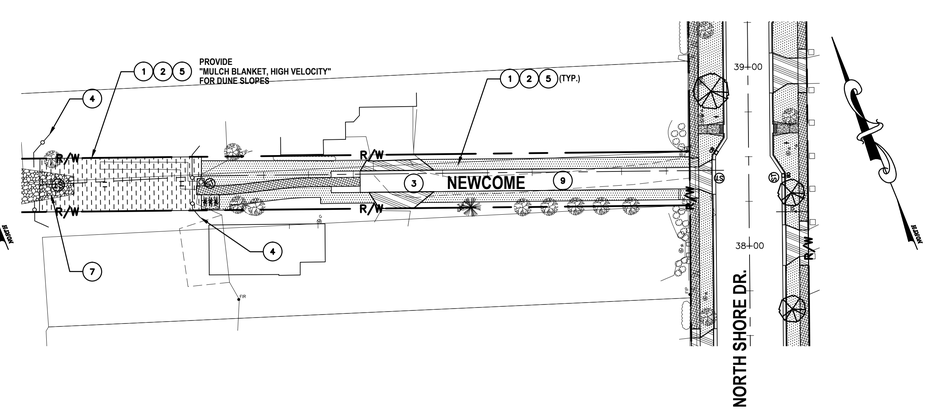
E:\CIVIL 3D\ENG_2014\14-0890\NORTH SHORE DRIVE\Dwg\14-0890 SOIL.dwg, 38, 6/6/2016 4:08:40 PM, sorton, 1:1

Item Description	Unit	Sht 39 Quantity
Maintenance Gravel	Cyd	300
Silt Fence	Ft	500
Inlet Protection, Fabric Drop	Ea	30
Topsoil Surface, 4 inch, screened	Syd	3000
Seed & Fertilizer	Syd	3000
Mulch Blanket	Syd	3000
Mulch Blanket, High Velocity	Syd	400









NOTES:

1. CONDUCT INSPECTIONS OF ALL TEMPORARY SOIL EROSION AND SEDIMENTATION CONTROLS WEEKLY AND FOLLOWING RAIN EVENTS THAT RESULT IN RUNOFF FROM THE SITE. NOTE DEFICIENCIES AND CORRECTIVE ACTION NEEDED. PROVIDE A REPORT OF THESE INSPECTIONS TO THE ENGINEER AND DOCUMENT THE DATE CORRECTIVE ACTION IS TAKEN.
2. MAINTAIN TEMPORARY SOIL EROSION AND SEDIMENTATION CONTROL MEASURES IN PROPER WORKING CONDITION FOR THE LIFE OF THE PROJECT UNTIL THE SITE HAS BEEN RESTORED.
3. CONDUCT SUPPLEMENTARY SEEDING/FERTILIZING PER SPECIFICATIONS TO CORRECT ISSUES ARISING FROM WEATHER DAMAGE, FILL IN BARE OR SPARSELY VEGETATED AREAS, AND ACHIEVE DENSE AND HEALTHY GRASS GROWTH.
4. AT THE ENGINEER'S SOLE DISCRETION, ADDITIONAL PAYMENT MAY BE MADE FOR SUPPLEMENTAL OR ADDITIONAL SEEDING/FERTILIZING AND MULCHING NECESSARY DUE TO CIRCUMSTANCES BEYOND THE CONTROL OF THE CONTRACTOR EXCEPT OR ARISING OUT OF EXTREME WEATHER SUCH AS FLOODING.

APPLICABLE SOIL EROSION AND SEDIMENTATION CONTROL MEASURES

KEY	DESCRIPTION
1	SELECTIVE GRADING AND SHAPING
2	PERMANENT/ TEMPORARY SEEDING
3	AGGREGATE COVER
4	GEOTEXTILE SILT FENCE
5	MULCHING AND MULCH ANCHORING
6	DROP INLET SEDIMENT TRAP
7	RIP RAP, HEAVY
8	SAND FENCE AND DUNE STABILIZATION
9	PAVEMENT

HATCH LEGEND

- MULCH BLANKET
- MULCH BLANKET, HIGH VELOCITY
- DRIVEWAY, NONREINF. CONC., 6 INCH
- SIDEWALK, 4 INCH
- SIDEWALK RAMP, 6 INCH
- DETECTABLE WARNING SURFACE, CAST IRON
- SILT FENCE

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

NO.	REVISION DESCRIPTION:	BY:	DATE:

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PROJECT:
NORTH SHORE DRIVE
RECONSTRUCTION PROJECT
CITY OF SOUTH HAVEN
VAN BUREN COUNTY, MI

SHEET TITLE:
NORTH SHORE DRIVE
SOIL EROSION CONTROL
AND SEDIMENTATION PLAN

DRAWN BY: SPJ/SCR
DESIGNED BY: CAK/SPJ/LT
PM REVIEW: TRD
QA/QC REVIEW:
DATE: MAY 2016
SEAL:

SIGNATURE:
DATE:

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SCALE:
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VERT: N/A

ACI JOB #
14-0890

SHEET NO.

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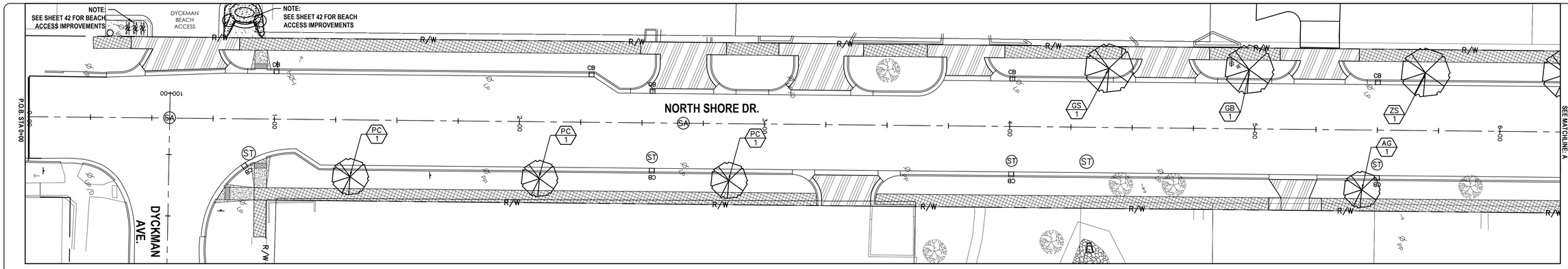

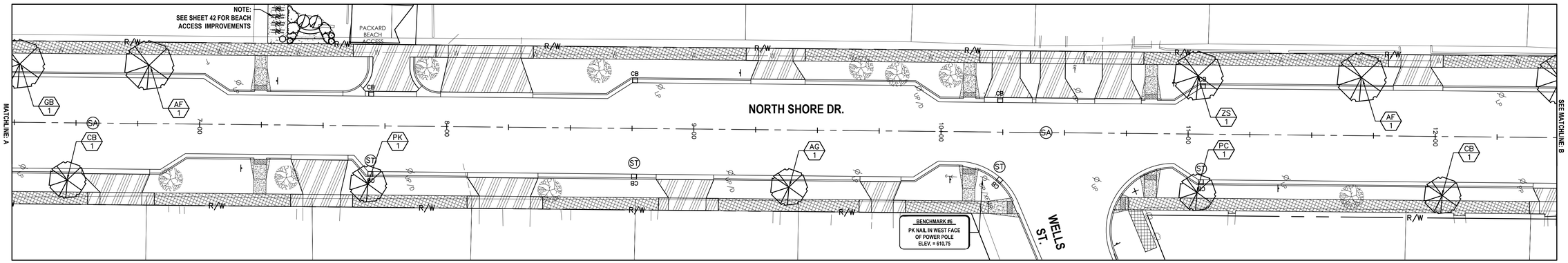

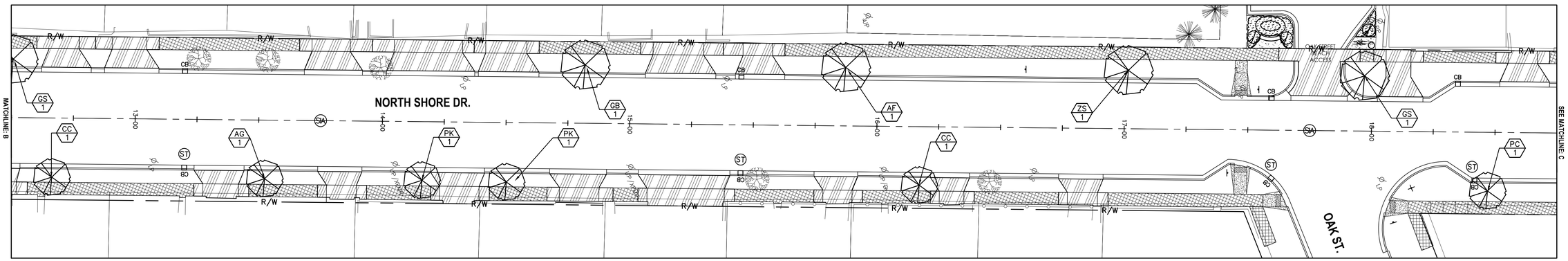

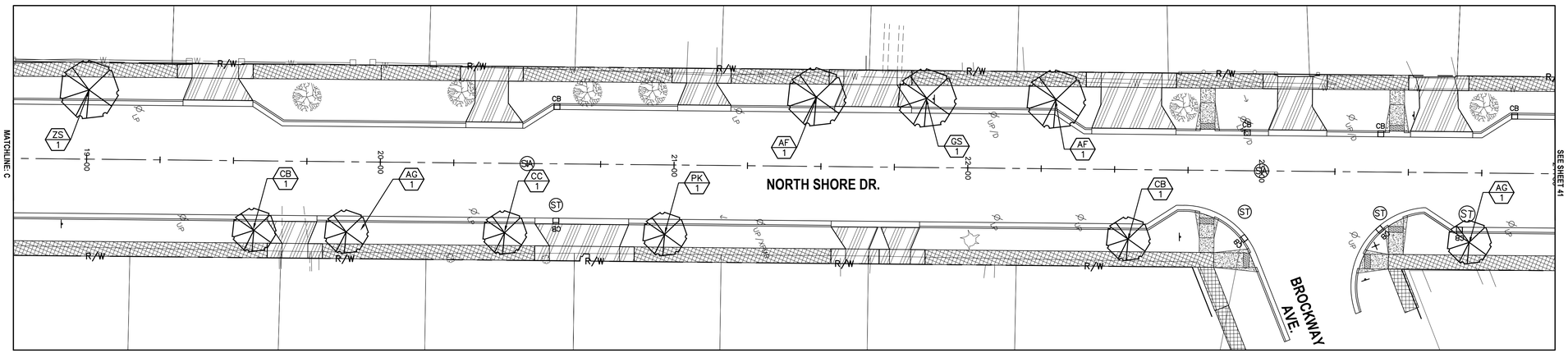

LANDSCAPE GENERAL NOTE:
SEE SHEET 43 FOR PLANT MATERIAL LIST, QUANTITIES AND DETAILS.

GRAPHIC SCALE

(IN FEET)
1 inch = 20 ft.

NO.	REVISION DESCRIPTION:	BY:	DATE:

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Portage, IN
25 West Main Street
Muskegon, Michigan 49523
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F 269.927.1017
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PROJECT:
NORTH SHORE DRIVE RECONSTRUCTION PROJECT CITY OF SOUTH HAVEN VAN BUREN COUNTY, MI

SHEET TITLE:
NORTH SHORE DRIVE LANDSCAPE PLAN - 1 STA 0+00 TO 24+00

DRAWN BY: KB
DESIGNED BY: CAK/SPJ/LT
PM REVIEW: TRD
QA/QC REVIEW:
DATE: MAY 2016
SEAL:
SIGNATURE:
DATE:

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SCALE:
HORZ: 1"=20'
VERT: N/A

ACI JOB #
14-0890

SHEET NO.
40 of 51

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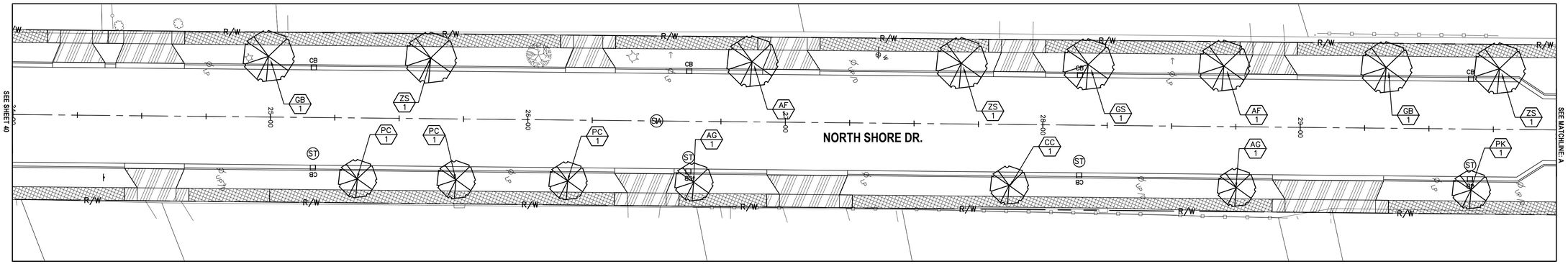
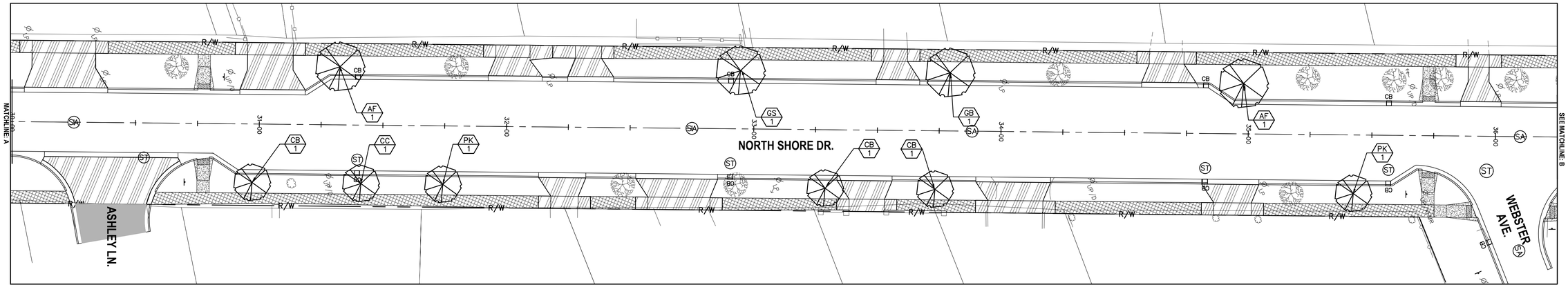
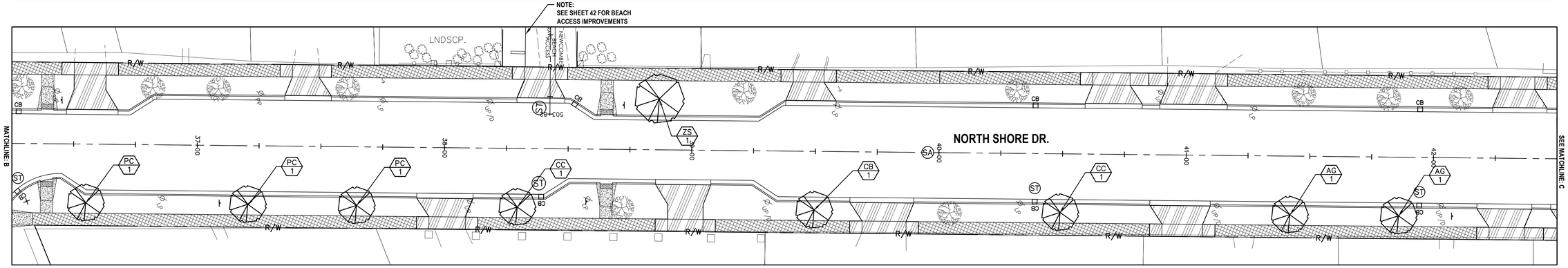
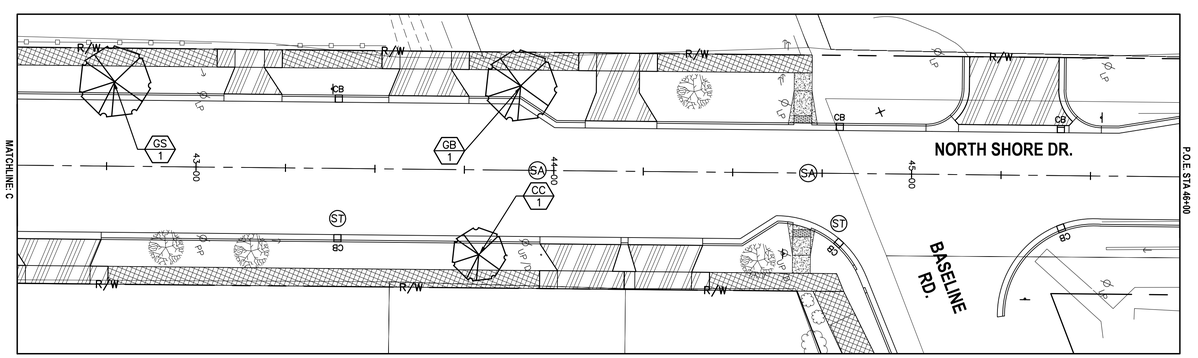
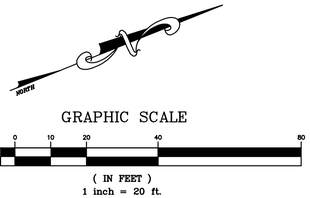








LANDSCAPE GENERAL NOTE:
SEE SHEET 43 FOR PLANT MATERIAL LIST, QUANTITIES AND DETAILS.



NO.	REVISION DESCRIPTION:	BY:	DATE:

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Benton Harbor, MI 49023
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F 269.927.1017

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PROJECT:
NORTH SHORE DRIVE
RECONSTRUCTION PROJECT
CITY OF SOUTH HAVEN
VAN BUREN COUNTY, MI

SHEET TITLE:
NORTH SHORE DRIVE
LANDSCAPE PLAN - 2
STA 24+00 TO 46+00

DRAWN BY: KB
DESIGNED BY: CAK/SPJ/LT
PM REVIEW: TRD
QA/QC REVIEW:
DATE: MAY 2016
SEAL:

SIGNATURE:
DATE:

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SCALE:
HORZ: 1"=20'
VERT: N/A

ACI JOB #
14-0890

SHEET NO.
41 of 51

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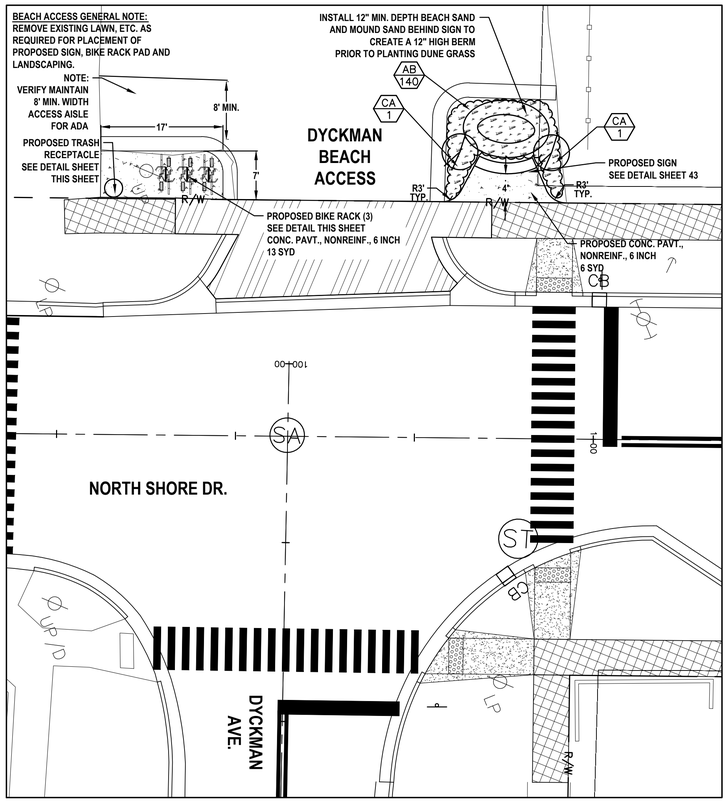
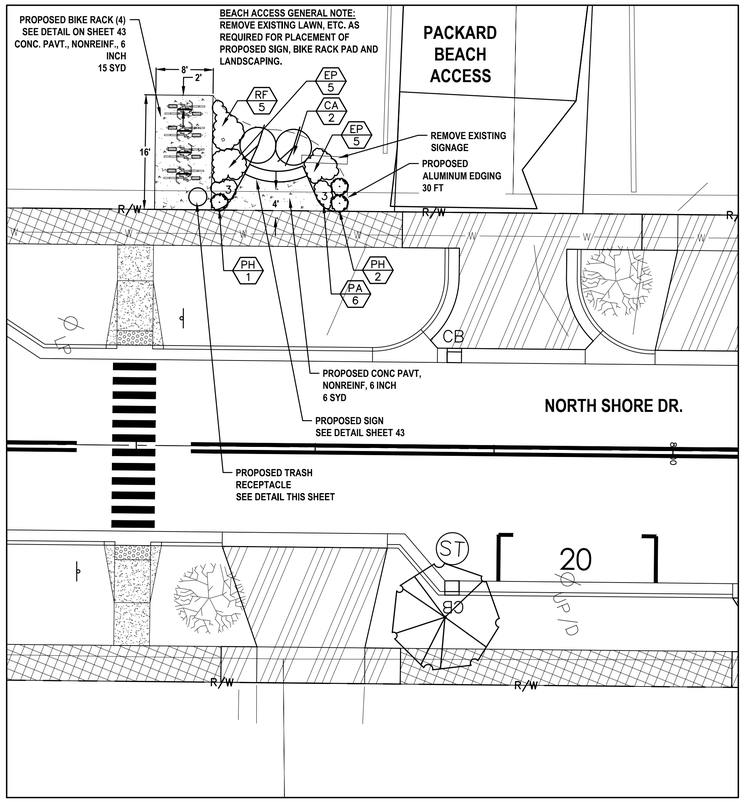
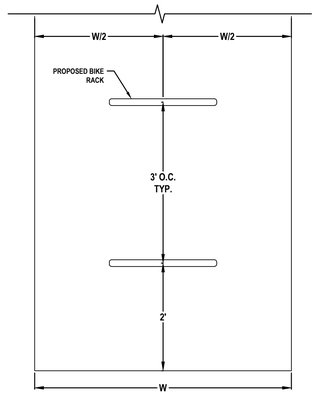




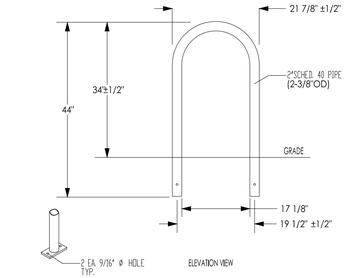


PROPOSED BIKE RACK SPACING
NOT TO SCALE

MADRAX

NOTE:
BIKE RACK TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR

MADRAX DIVISION
TRILARY, INC.
1080 UNEK DRIVE
WAUNAKEE, WI 53597
P(800) 448-7931, P(608) 849-1880, F(608) 849-1881
WWW.MADRAX.COM, E-MAIL: SALES@MADRAX.COM



NOTES:
1. ALL MADRAX RACKS SHALL BE INSTALLED WITH BLACK GROUT COVER (GC-238) FOR EACH MOUNTING POINT.
2. PROVIDE MADRAX PART NUMBER DA1220-5 DROP IN ANCHORS WITH SS REMOVABLE BOLTS FOR MOUNTING.
3. PROVIDE MAD SHIELD FOR MADRAX RACKS.

☐ SURFACE FLANGE MOUNT (SF)
SECTION VIEWS

NOTES:
1. INSTALL BIKE RACKS ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
2. CONSULTANT TO SELECT COLOR/FINISH, SEE MANUFACTURER'S SPECIFICATIONS.
3. SEE SITE PLAN FOR LOCATION OR CONSULT OWNER.

PRODUCT: U238HG(SF,SG)
DESCRIPTION 'U' BIKE RACK
2 BIKE, SURFACE OR IN GROUND MOUNT

DATE: 8-5-02
ENG: TLG

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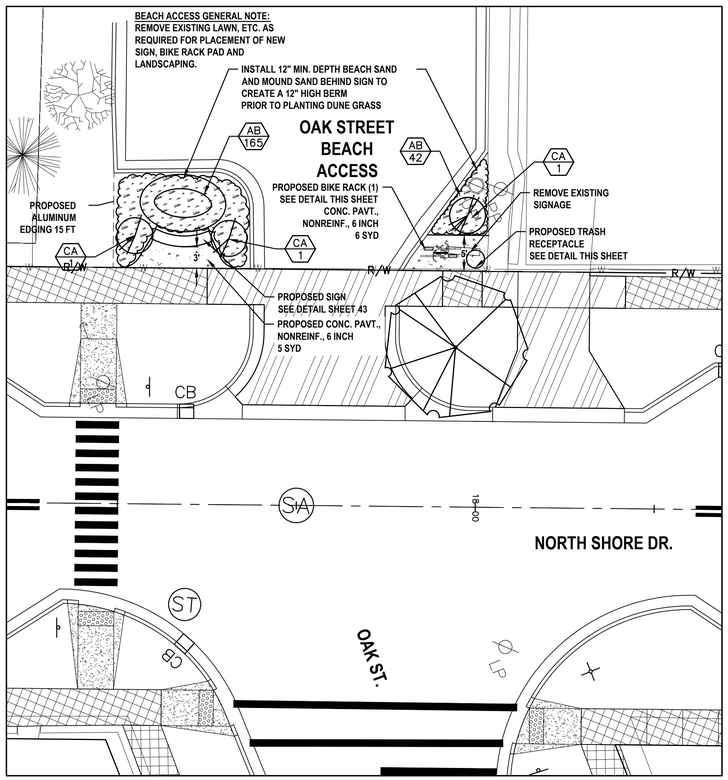
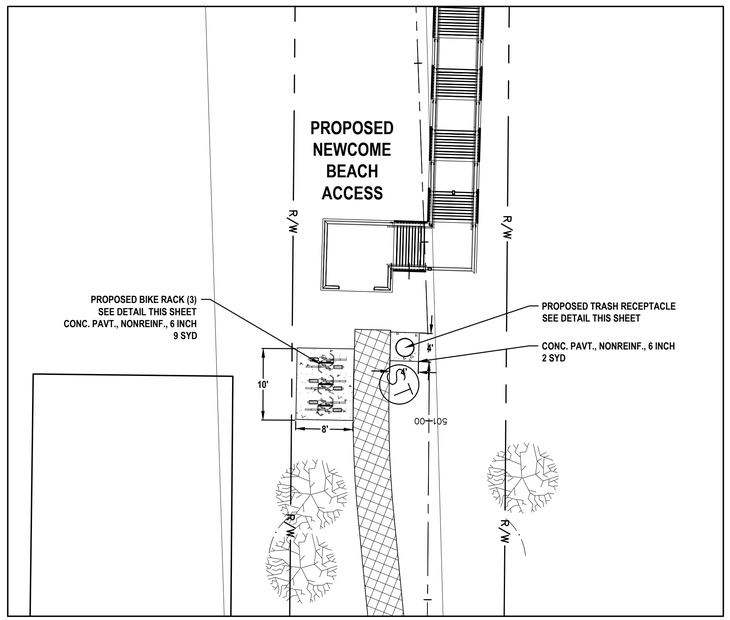
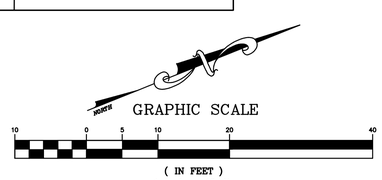
PROPOSED MADRAX U RACK
NOT TO SCALE





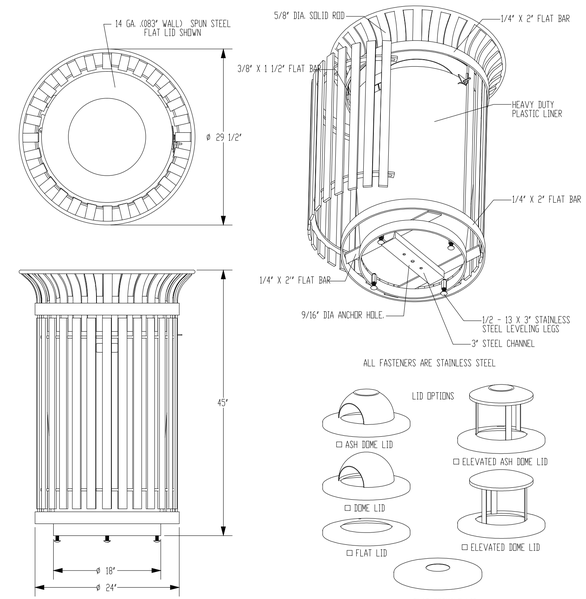
Item Description	Unit	Sht 42 Quantity
Conc. Pavt., Nonreinf., 6 inch	Syd	65
Beach Sand	Cyd	20
Bike Rack	Ea	11
Trash Receptacle	Ea	4
Aluminum Edging	Ft	45
Entrance Signage, Installed	Ea	3



THOMAS STEELE

NOTE:
TRASH RECEPTACLE TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR

THOMAS STEELE DIVISION
GRABER MANUFACTURING, INC.
1080 UNEK DRIVE
WAUNAKEE, WI 53597
P(800) 448-7931, P(608) 849-1880, F(608) 849-1881
WWW.MADRAX.COM, E-MAIL: SALES@MADRAX.COM



PRODUCT: CRTR-42-DOOR
DESCRIPTION: CARNIVAL TRASH RECEPTACLE 42 GAL. WITH DOOR
DATE: 1-21-15
ENG: DMC

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TRASH LIDS ARE ATTACHED WITH 2 EA STEEL VINYL COATED AIRCRAFT CABLE. PLASTIC LINER INCLUDED.

SITE FURNISHING IS POWDER COATED WITH TGIC POLYESTER. STEEL SURFACE PREP INCLUDES MECHANICAL AND CHEMICAL ETCHING FOLLOWED WITH A COATING TO IMPROVE ADHESION AND CORROSION RESISTANCE.

PROPOSED THOMAS STEEL TRASH RECEPTACLE
NOT TO SCALE

NO.	REVISION DESCRIPTION:	BY:	DATE:

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Confidence By Design

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Portage, IN

25 West Main Street
Paw Paw, Michigan 49023
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PROJECT:
NORTH SHORE DRIVE
RECONSTRUCTION PROJECT
CITY OF SOUTH HAVEN
VAN BUREN COUNTY, MI

SHEET TITLE:
NORTHSHORE DRIVE
LANDSCAPE INTERSECTION
DETAILS

DRAWN BY: KB
DESIGNED BY: CAK/SPJ/LT
PM REVIEW: TRD
QA/QC REVIEW:
DATE: MAY 2016
SEAL:

SIGNATURE:
DATE:

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SCALE:
HORZ: 1"=10'
VERT: N/A

ACI JOB #
14-0890

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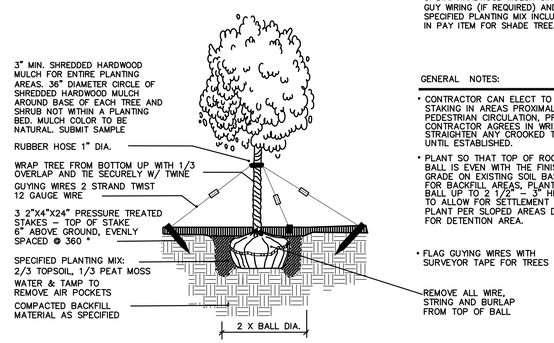
PLANT MATERIAL LIST

KEY	BOTANICAL NAME	COMMON NAME	SIZE	QTY	REMARKS
	SHADE TREES				
AF	ACER FREEMANII 'JEFFERSRED'	AUTUMN BLAZE MAPLE	3" BB	9	LOWEST LIMB 6'-0"
GB	GINKGO BILOBA 'PRINCETON SENTRY''	PRINCETON SENTRY MAIDENHAIR TREE	3" BB	7	LOWEST LIMB 6'-0"
GS	GLEDITSIA T. 'STREET KEEPER'	STREET KEEPER HONEYLOCUST	3" BB	7	LOWEST LIMB 6'-0"
ZS	ZELKOVA SERRATA 'JFS-KW1'	CITY SPRITE ZELKOVA	2" BB	8	LOWEST LIMB 5'-0"
	ORNAMENTAL TREES				
AG	AMELANCHIER X GRANDIFLORA 'A.B.'	AUTUMN BRILLIANCE AMELANCHIER	2" BB	9	LOWEST LIMB 5'-0"
CB	CARPINUS BETULUS ' FASTIGIATA'	PYRAMIDAL EUROPEAN HORNBEAM	2" BB	8	LOWEST LIMB 5'-0"
CC	CRATAEGUS C. INERMIS 'CRUZAM'	CRUZAM HAWTHORN	2" BB	8	LOWEST LIMB 5'-0"
PK	PRUNUS S. 'KWANZAN'	KWANZAN FLOWERING CHERRY	2" BB	7	LOWEST LIMB 5'-0"
PC	PYRUS C. 'ARISTOCRAT'	ARISTOCRAT FLOWERING PEAR	2" BB	11	LOWEST LIMB 5'-0"
	GRASSES/PERENNIALS/SHRUBS		NO. 1		
AB	AMMOPHILA BREVILIGULATA	NATIVE DUNEGRASS	R.S.	347	PLANT 12" O.C. STAGGER
CA	CORNUS ALBA 'SIBERICA'	REDTWIG SIBERIAN DOGWOOD	NO. 5	7	
EP	ECHINACEA PURPUREA 'MAGNUS'	MAGNUS CONEFLOWER	NO. 2	10	PLANT 24" O.C. STAGGER
PH	PENNISETUM ALOPECUROIDES 'HAMELYN'	HAMELYN FOUNTAIN GRASS	NO. 2	3	PLANT 30" O.C. STAGGER
PA	PEROVSKIA A. 'LITTLE SPIRE'	LITTLE SPIRE RUSSIAN SAGE	NO. 2	6	PLANT 30" O.C. STAGGER
RF	RUDBECKIA FULGIDA 'GOLDSTRUM'	GOLDSTRUM BLACK EYED SUSAN	NO. 2	5	PLANT 24" O.C. STAGGER

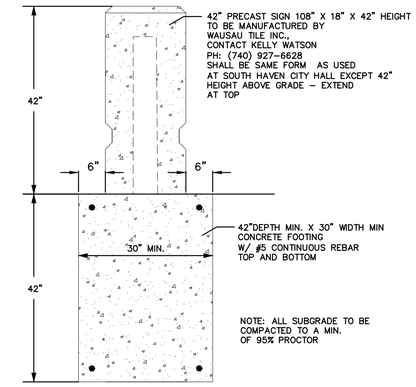


NOTE: COST FOR TREE WRAPPING, 3' DIA. HARDWOOD MULCH CIRCLE, GUY WIRING (IF REQUIRED) AND SPECIFIED PLANTING MIX INCLUDED IN PAY ITEM FOR SHADE TREE.

GENERAL NOTES:

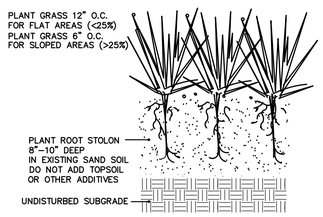
- CONTRACTOR CAN ELECT TO ELIMINATE STAKING IN AREAS PROXIMAL TO PEDESTRIAN CIRCULATION, PROVIDED CONTRACTOR AGREES IN WRITING TO STRAIGHTEN ANY CROOKED TREES UNTIL ESTABLISHED.
- PLANT SO THAT TOP OF ROOT BALL IS EVEN WITH THE FINISH GRADE ON EXISTING SOIL BASE. FOR BACKFILL AREAS, PLANT BALL UP TO 2 1/2" – 3" HIGHER TO ALLOW FOR SETTLEMENT – PLANT PER SLOPED AREAS DETAIL FOR DETENTION AREA.
- FLAG GUYING WIRES WITH SURVEYOR TAPE FOR TREES

SHADE/EVERGREEN TREE PLANTING DETAIL
NOT TO SCALE



PROPOSED BEACH ACCESS SIGN AND FOOTING
NOT TO SCALE

NOTE:
PRECAST SIGN TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR - ON FOOTING AS SHOWN.
CONTRACTOR TO PROVIDE THREADED RODS AND EPOXY IN PLACE AS PER DRAWING BELOW. PAYMENT FOR COMPLETE SIGN ASSEMBLY (INCLUDING FOOTING) SHALL BE PAID AS "ENTRANCE SIGN, INSTALLED".



NATIVE DUNEGRASS PLANTING SECTION
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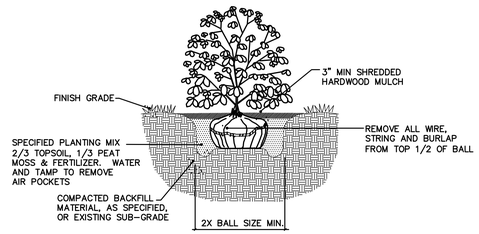
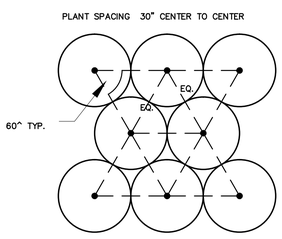
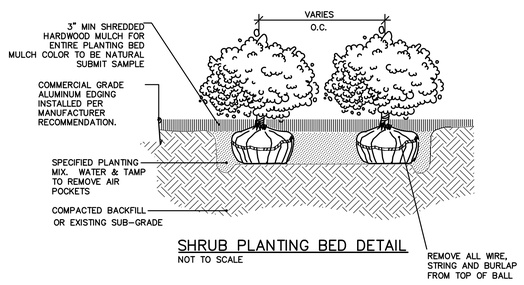


SHRUB PLANTING DETAIL
NOT TO SCALE

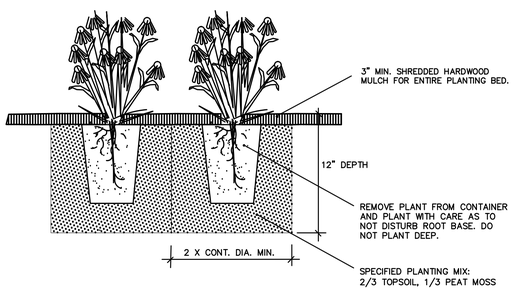
NOTE: COST FOR 3" DEPTH HARDWOOD MULCH AND SPECIFIED PLANTING MIX INCLUDED IN PAY ITEM FOR SHRUB.



TYPICAL MASS PLANTING DETAIL
NOT TO SCALE

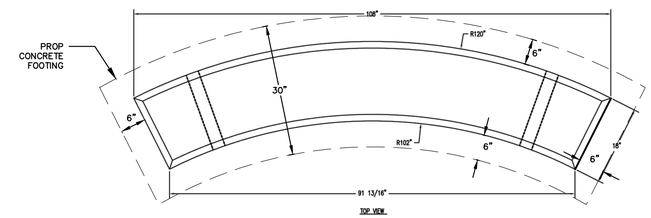


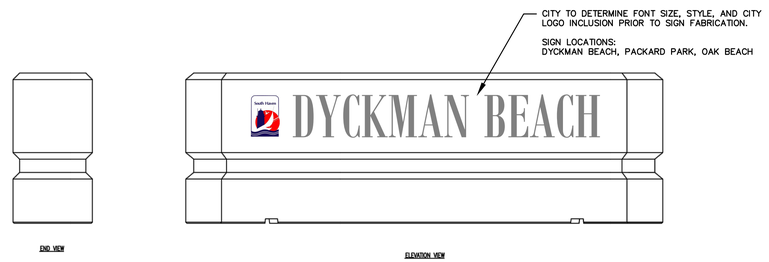
SHRUB PLANTING BED DETAIL
NOT TO SCALE

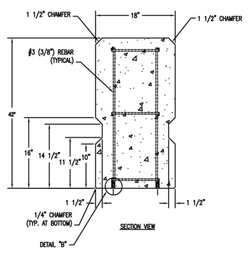


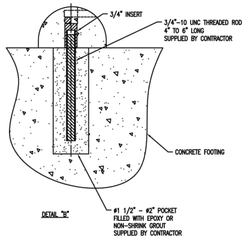
CONTAINER GROWN PLANTING SECTION
NOT TO SCALE

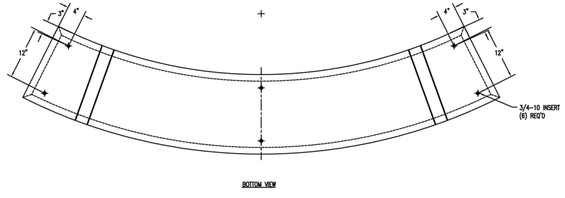
NOTE: COST FOR 3" DEPTH HARDWOOD MULCH AND SPECIFIED PLANTING MIX INCLUDED IN PAY ITEM FOR PERENNIAL/ORNAMENTAL GRASS.











REV	DESCRIPTION	NAME	DATE
1			

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WEB SITE: WWW.DYNAMICSAITE.COM

DRAWN BY JPZ	JOB SIGN		MATERIAL CONCRETE
TITLE	JOB NO.		WEIGHT
SCALE	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES FRACTIONS ± 1/8	DATE 2/12/16	FINISH OPTIONS
			DWG. NO. 1 OF 1

NO.	REVISION DESCRIPTION:	BY:	DATE:

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PROJECT:
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CITY OF SOUTH HAVEN
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SHEET TITLE:
NORTHSHORE DRIVE
LANDSCAPING DETAILS

DRAWN BY: KB
DESIGNED BY: CAK/$PJ/LT
PM REVIEW: TRD
QA/QC REVIEW:
DATE: MAY 2016
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ACI JOB #
14-0890

SHEET NO.

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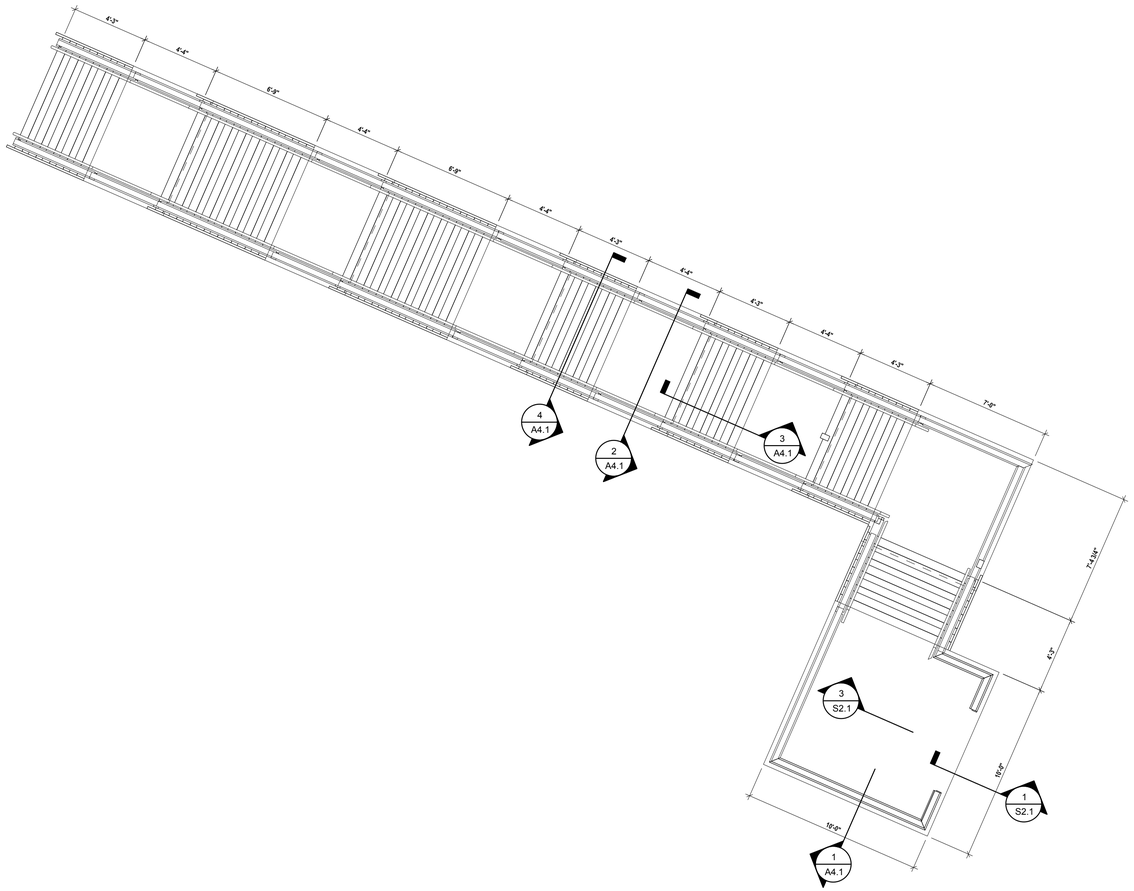

FLOOR PLAN
SCALE: 1/4" = 1'-0"

GENERAL NOTES

A. ALL DECKING TO BE COMPOSITE IN FULL 2x6 SIZE
B. ALL FRAMING & GUARDRAIL/HANDRAIL MEMBERS TO BE PRESSURE TREATED
C. ALL METAL CONNECTORS TO BE GALVANIZED

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PROJECT:
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VAN BUREN COUNTY, MI

SHEET TITLE:
STAIRS PLAN

DRAWN BY: JB/AC/MDN
DESIGNED BY: CAK/SPJ/LT/ARD
PM REVIEW: TRD/ARD
QA/QC REVIEW: JMS
DATE: MAY 2016
SEAL:

SIGNATURE:
DATE:

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14-0890

SHEET NO.

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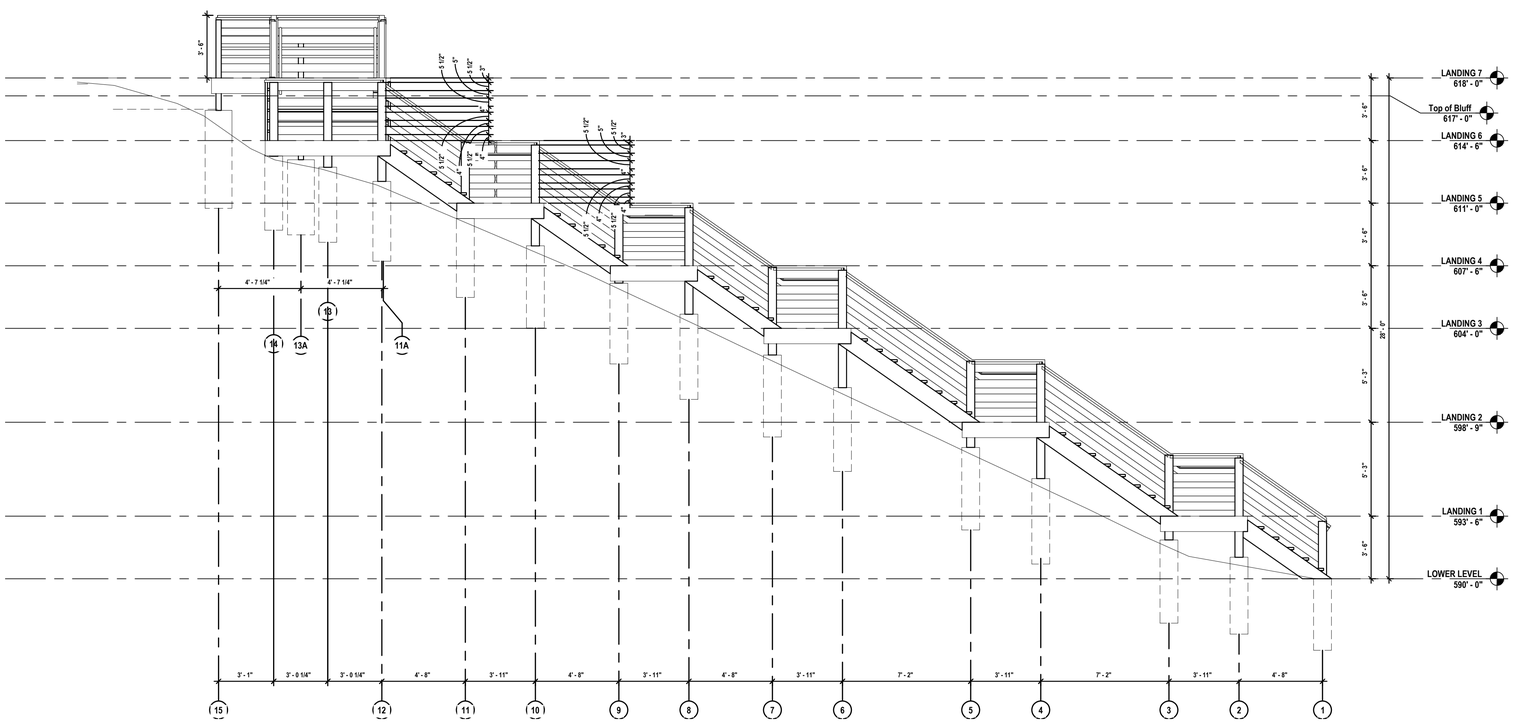

1 North View
1/4" = 1'-0"

GENERAL NOTES

A. ALL DECKING TO BE COMPOSITE IN FULL 2x6 SIZE
B. ALL FRAMING & GUARDRAIL/HANDRAIL MEMBERS TO BE PRESSURE TREATED
C. ALL METAL CONNECTORS TO BE GALVANIZED

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PROJECT:
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SHEET TITLE:
STAIRS EXTERIOR ELEVATIONS - 1

DRAWN BY: JB/AC/MDN
DESIGNED BY: CAK/SPJ/LT/ARD
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QA/QC REVIEW: JMS
DATE: MAY 2016
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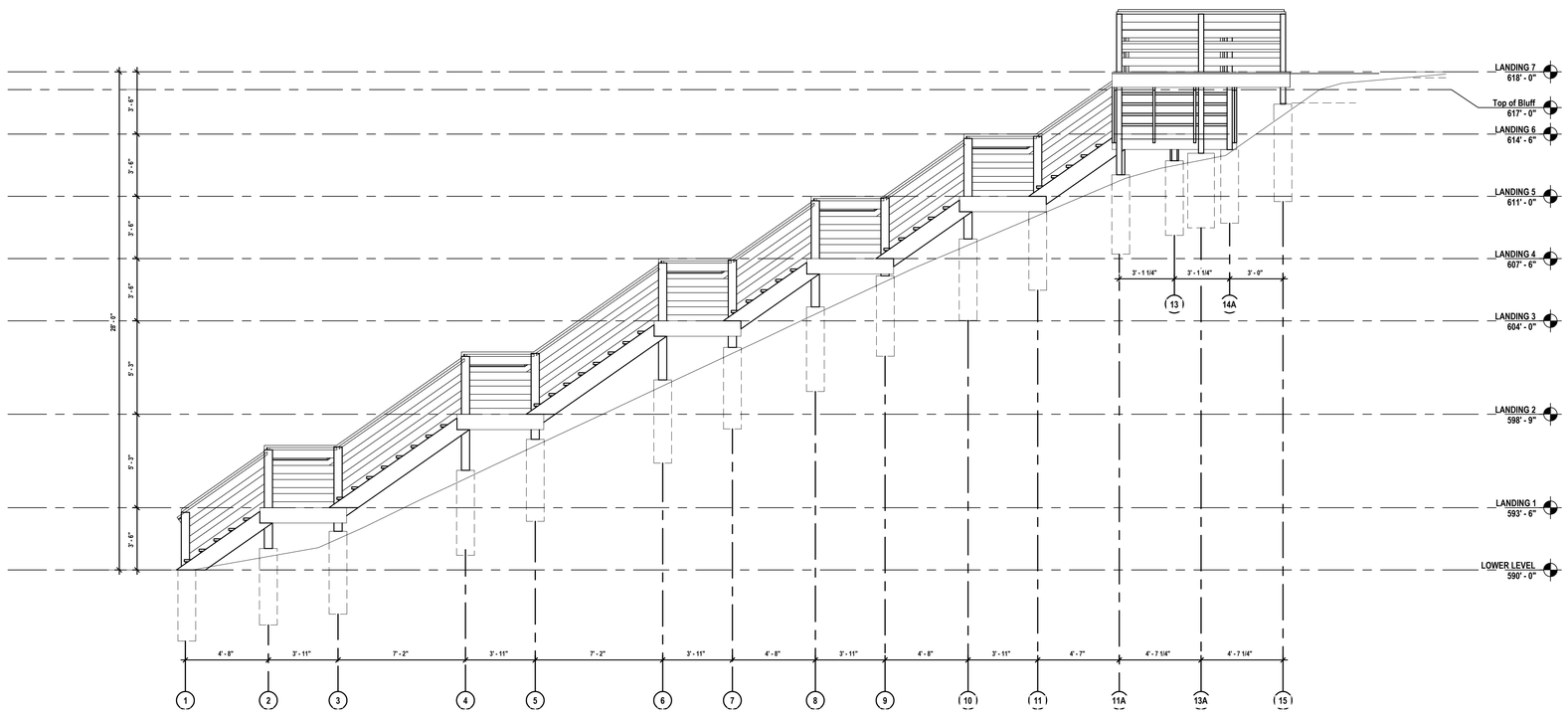

1 South View
1/4" = 1'-0"

GENERAL NOTES

A. ALL DECKING TO BE COMPOSITE IN FULL 2x6 SIZE
B. ALL FRAMING & GUARDRAIL/HANDRAIL MEMBERS TO BE PRESSURE TREATED
C. ALL METAL CONNECTORS TO BE GALVANIZED

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PROJECT:
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SHEET TITLE:
STAIRS EXTERIOR ELEVATIONS - 2

DRAWN BY: JB/AC/MDN
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QA/QC REVIEW: JMS
DATE: MAY 2016
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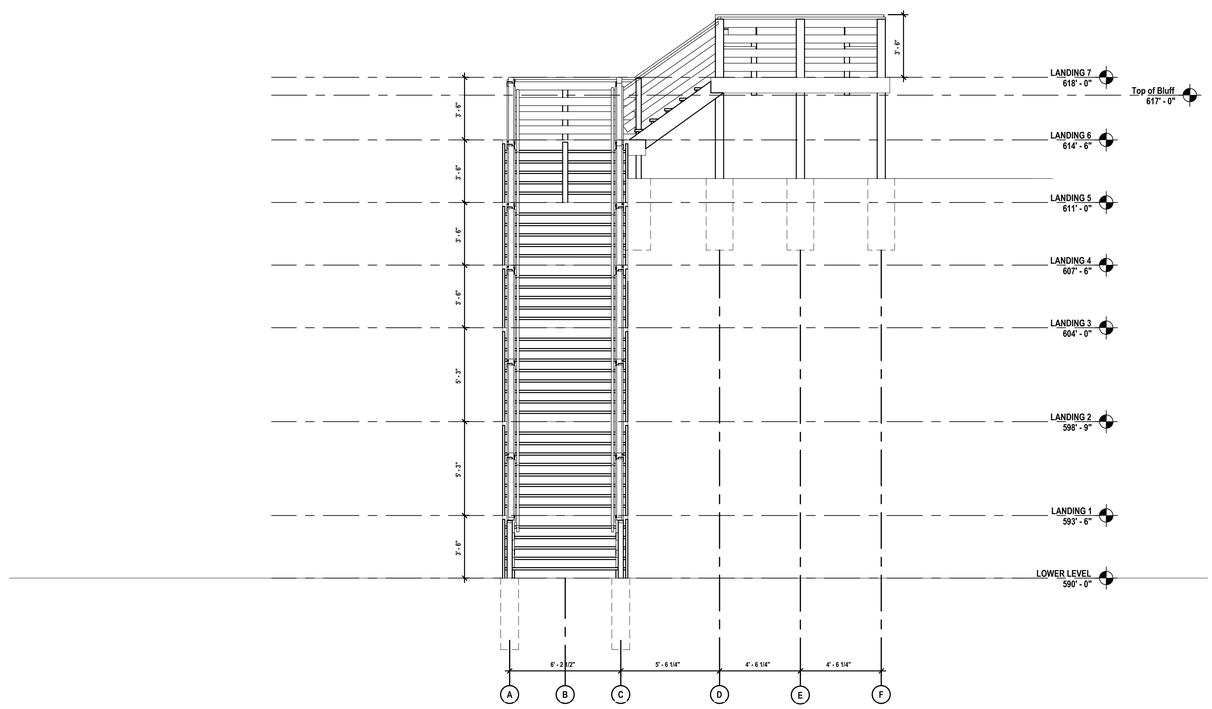
VERT: N/A

ACI JOB #
14-0890

SHEET NO.
46 of 51

NO.	REVISION DESCRIPTION:	BY:	DATE:



1 West View
1/4" = 1'-0"

GENERAL NOTES

A. ALL DECKING TO BE COMPOSITE IN FULL 2x6 SIZE
B. ALL FRAMING & GUARDRAIL/HANDRAIL MEMBERS TO BE PRESSURE TREATED
C. ALL METAL CONNECTORS TO BE GALVANIZED

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SHEET TITLE:
STAIRS EXTERIOR ELEVATIONS - 3

DRAWN BY: JB/AC/MDN
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SCALE:
HORZ: 1/4"=1'
VERT: N/A

ACI JOB #
14-0890

SHEET NO.

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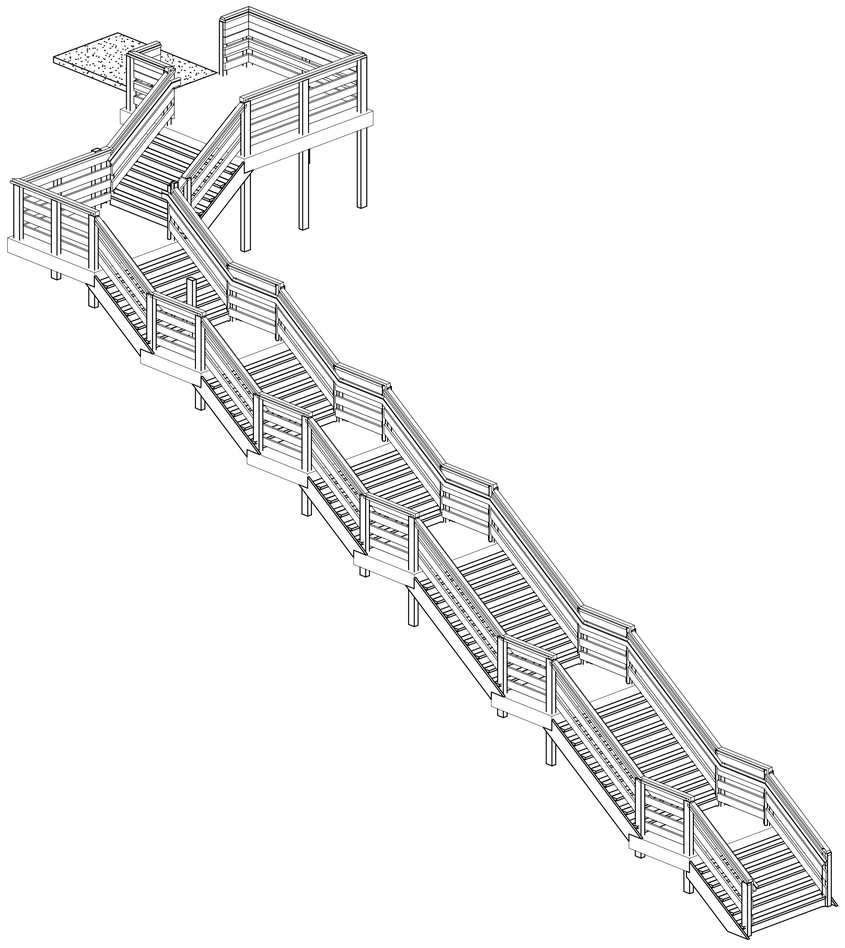

1 3D Ortho 1

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SHEET TITLE:
STAIRS 3D VIEW

DRAWN BY: JB/AC/MDN
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QA/QC REVIEW: JMS
DATE: MAY 2016
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VERT: N/A

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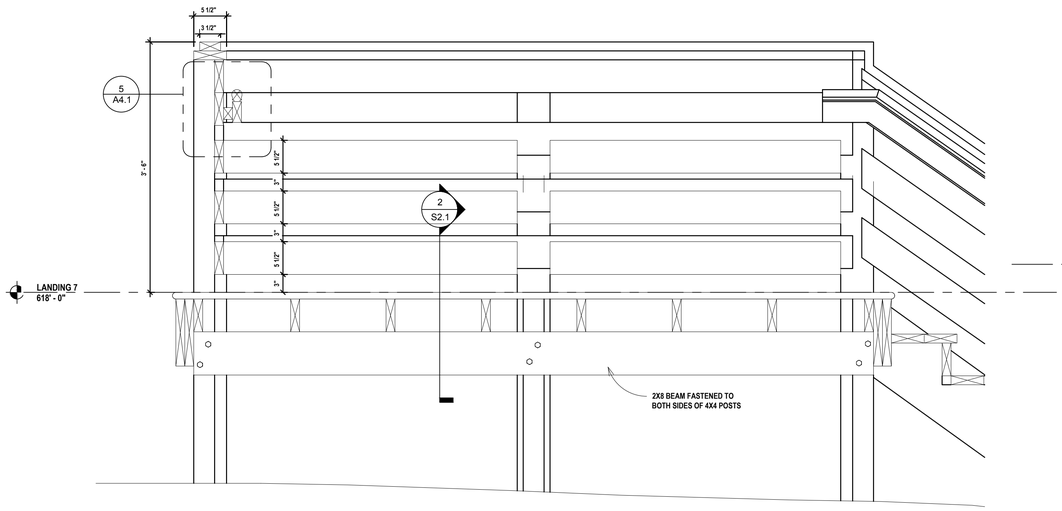
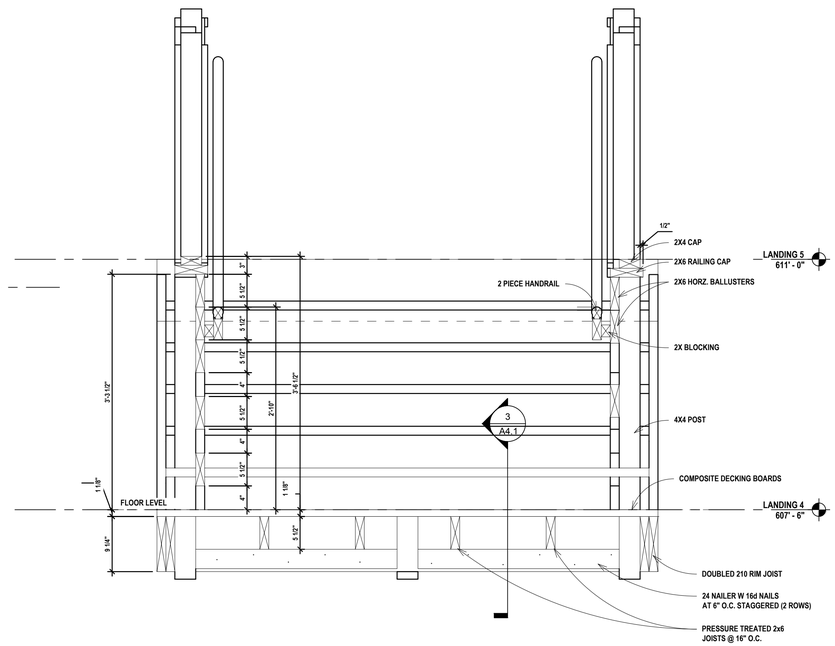
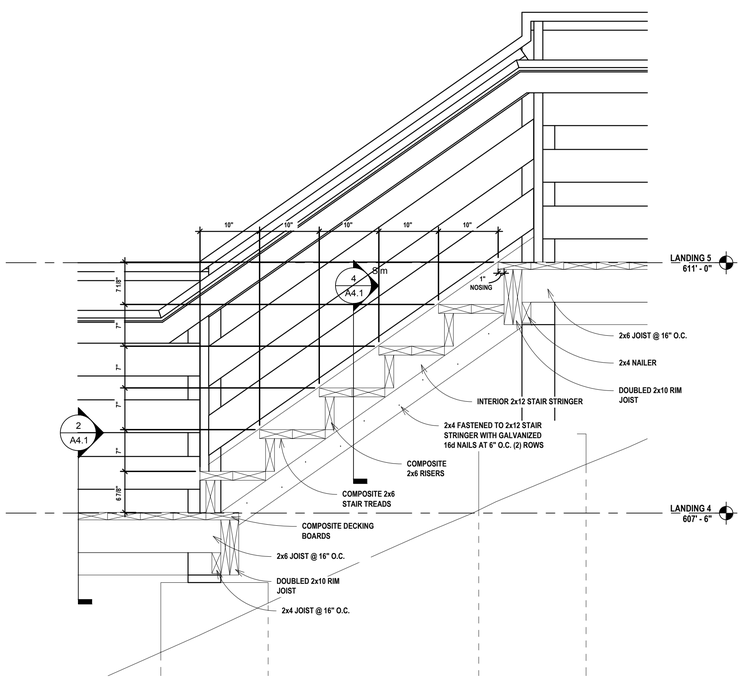


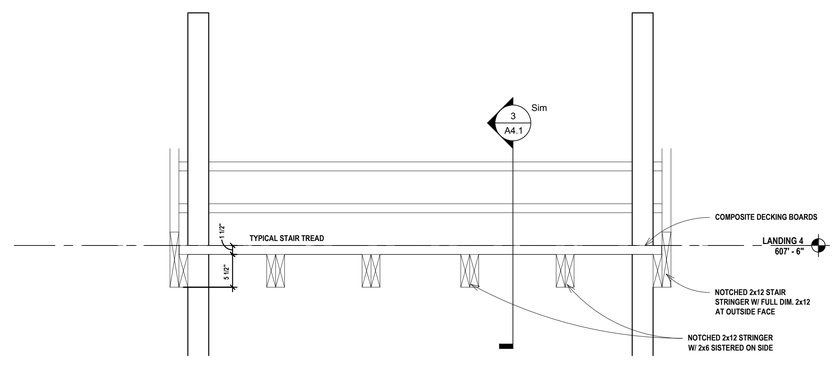
1 SECTION THRU UPPER STAIR LANDING
1" = 1'-0"



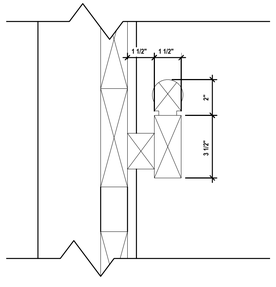
2 SECTION THRU TYPICAL STAIR LANDING
1" = 1'-0"



3 SECTION THRU TYPICAL STAIR RUN
1" = 1'-0"



4 SECTION THRU STAIR TREAD
1" = 1'-0"



5 TYPICAL HANDRAIL
3" = 1'-0"

GENERAL NOTES

A. ALL DECKING TO BE COMPOSITE IN FULL 2x6 SIZE
B. ALL FRAMING & GUARDRAIL/HANDRAIL MEMBERS TO BE PRESSURE TREATED
C. ALL METAL CONNECTORS TO BE GALVANIZED

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PROJECT:
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CITY OF SOUTH HAVEN
VAN BUREN COUNTY, MI

SHEET TITLE:
STAIRS CONSTRUCTION DETAILS

DRAWN BY: JB/AC/MDN
DESIGNED BY: CAK/SPJ/LT/ARD
PM REVIEW: TRD/ARD
QA/QC REVIEW: JMS
DATE: MAY 2016
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VERT: N/A

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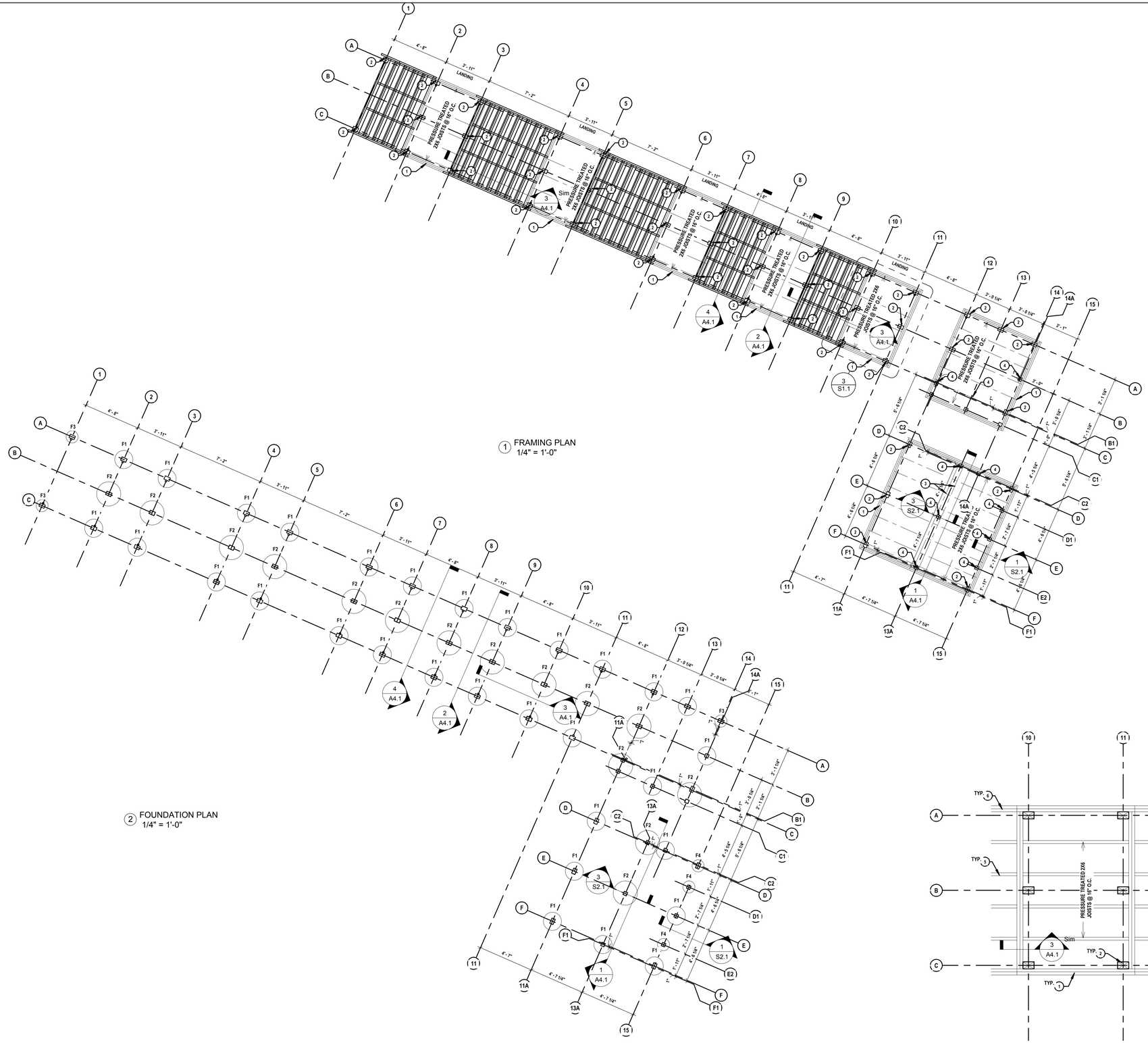
14-0890

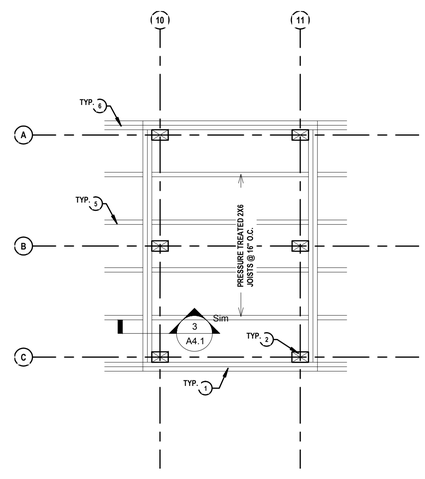
SHEET NO.
49 of 51

NO.	REVISION DESCRIPTION:	BY:	DATE:



1 FRAMING PLAN
1/4" = 1'-0"

2 FOUNDATION PLAN
1/4" = 1'-0"



3 ENLARGED LANDING FRAMING PLAN
(Typical)
1/2" = 1'-0"

GENERAL NOTES

A. ALL DECKING TO BE COMPOSITE IN FULL 2x6 SIZE
B. ALL FRAMING & GUARDRAIL/HANDRAIL MEMBERS TO BE PRESSURE TREATED
C. ALL METAL CONNECTORS TO BE GALVANIZED

FRAMING PLAN NOTES

1 2 - 2X10 PRESSURE TREATED; AT LANDING PERIMETER

2 PRESSURE TREATED 4 X 6 POST (TYP.)

3 PRESSURE TREATED 2 - 2X8 BEAM

4 PRESSURE TREATED 4 X 4 POST (TYP.)

5 INTERMEDIATE STAIR SUPPORTS - 1 - 2X12 CUT TO PROFILE OF STEPS, 2 - 2X6 ATTACHED, ONE ON EITHER SIDE

6 (2) 2x12 STRINGERS, PRESSURE TREATED - INTERIOR STRINGER CUT TO STAIR PROFILE FOR 2x6 TREADS AND RISERS

FOOTING SCHEDULE

F1 18" DIAMETER X 48" DEEP POST HOLE FOOTING
F2 24" DIAMETER X 48" DEEP POST HOLE FOOTING
F3 16" DIAMETER X 48" DEEP POST HOLE FOOTING
F4 12" DIAMETER X 48" DEEP FOOTING

SEE DETAIL 3/S2.1 FOR POST HOLE FOOTING

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RECONSTRUCTION PROJECT
CITY OF SOUTH HAVEN
VAN BUREN COUNTY, MI

SHEET TITLE:
STAIRS FOUNDATION AND FRAMING PLAN

DRAWN BY: JB/AC/MDN
DESIGNED BY: CAK/SPJ/LT/ARD
PM REVIEW: TRD/ARD
QA/QC REVIEW: JMS
DATE: MAY 2016
SEAL:

SIGNATURE:

DATE:

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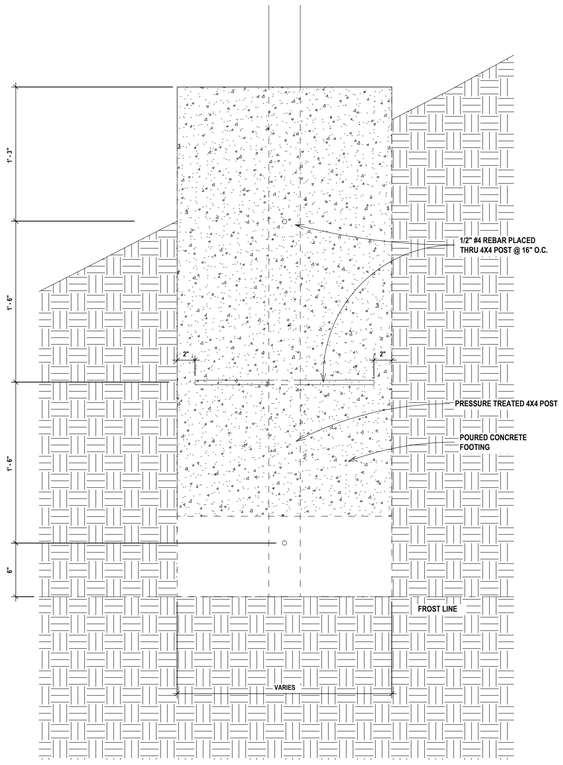
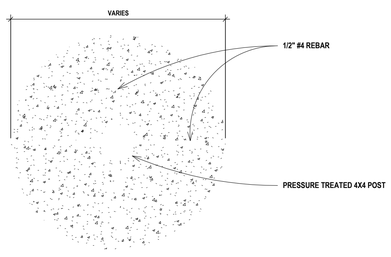
VERT: N/A

ACI JOB #
14-0890

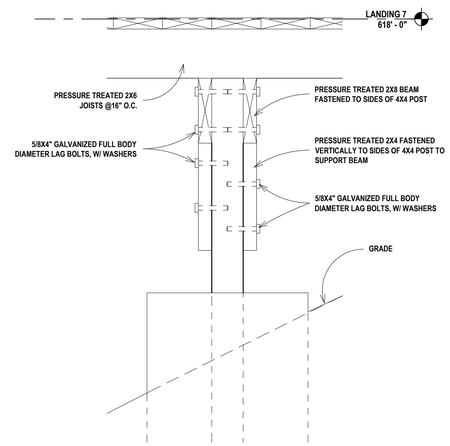
SHEET NO.
50 of 51



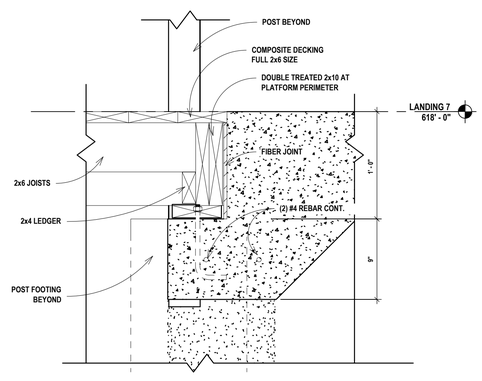
3 POST FOOTING DETAIL (TYP.)
1 1/2" = 1'-0"



4 FOOTING PLAN DETAIL (TYP.)
1 1/2" = 1'-0"



2 BEAM/ COLUMN DETAIL AT DECK INTERIOR LANDING
1 1/2" = 1'-0"



1 SECTION AT SIDEWALK LANDING
1 1/2" = 1'-0"

GENERAL NOTES

A. ALL DECKING TO BE COMPOSITE IN FULL 2x6 SIZE
B. ALL FRAMING & GUARDRAIL/HANDRAIL MEMBERS TO BE PRESSURE TREATED
C. ALL METAL CONNECTORS TO BE GALVANIZED

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PROJECT:
NORTH SHORE DRIVE
RECONSTRUCTION PROJECT
CITY OF SOUTH HAVEN
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SHEET TITLE:
STAIRS FOUNDATION DETAILS

DRAWN BY: JB/AC/MDN
DESIGNED BY: CAK/SPJ/LT/ARD
PM REVIEW: TRD/ARD
QA/QC REVIEW: JMS
DATE: MAY 2016
SEAL:

SIGNATURE:
DATE:

HARD COPY IS INTENDED TO BE 24" X 36" WHEN PLOTTED. SCALE(S) INDICATED AND GRAPHIC QUALITY MAY NOT BE ACCURATE FOR ANY OTHER SIZES

SCALE:
HORZ: AS NOTED
VERT: N/A

ACI JOB #
14-0890

SHEET NO.