

INDEX TO SHEETS

SHEET	DESCRIPTION
1	TITLE SHEET
2	CROSS SECTION AND DETAIL SHEET
3	STA 0+97.1 TO STA 2+42.5 ROAD PLAN AND PROFILE
3	STA 9+79.3 (P.O.B.) TO STA 14+40.2 (P.O.E.) ROAD PLAN AND PROFILE
5	TRAFFIC CONTROL
6	PAVEMENT MARKINGS

STANDARD PLANS

- R-1-G DRAINAGE STRUCTURES
- R-28-K CURB RAMP AND DETECTABLE WARNING DETAILS
- R-29-J DRIVEWAY OPENINGS & APPROACHES & CONCRETE SIDEWALKS
- R-30-G CONCRETE CURB AND CONCRETE CURB & GUTTER
- R-83-C UTILITY TRENCHES
- R-96-E SOIL EROSION & SEDIMENTATION CONTROL MEASURES
- R-7-F COVER B
- R-15-G COVER K
- R-9-D COVER D

NOTE: STANDARD PLANS INCLUDED IN PROPOSAL

CITY OF MUSKEGON

SECOND ST.

FROM HOUSTON AVE TO MUSKEGON AVE

TRAFFIC, SAFETY STANDARD PLANS

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

*STANDARD PLANS INCLUDED IN PROPOSAL

UTILITIES

ELECTRIC
 JOEL BROWN
 CONSUMERS ENERGY
 700 E STERNBERG ROAD
 NORTON SHORES, MI 49441
 (231) 557-8762

TELEPHONE
 MIKE THOMPSON
 FRONTIER COMMUNICATIONS
 860 TERRACE STREET
 MUSKEGON MI 49440
 (231) 727-1519

GAS
 TONY FERRIER
 DTE ENERGY
 2359 OLTHOFF DRIVE
 MUSKEGON MI 49444
 (231) 726-0943 (CELL)

CABLE
 JASON BROWN
 COMCAST
 700 W BROADWAY AVENUE
 NORTON SHORES, MI 49441
 (231) 726-0862

WATER & SEWER
 CITY OF MUSKEGON DPW
 1350 E KEATING AVENUE
 MUSKEGON MI 49442
 (231) 724-4100



CONSTRUCTION INCLUDES 0.11 MILES OF HMA PAVEMENT RECONSTRUCTION; INCLUDING HMA REMOVAL, HMA PAVEMENT, STORM SEWER, WATER SERVICES, CONCRETE SIDEWALKS, CURB RAMP, CURB & GUTTER ON SECOND ST; HOUSTON AVE IN THE CITY OF MUSKEGON, MUSKEGON COUNTY.

PREPARED UNDER THE SUPERVISION OF:

DAN VANDERHEIDE, P.E.
 CITY ENGINEER

CITY OF MUSKEGON
 ENGINEERING DEPARTMENT
 1350 E KEATING AVE
 MUSKEGON MI 49442

57004
 REGISTRATION NUMBER

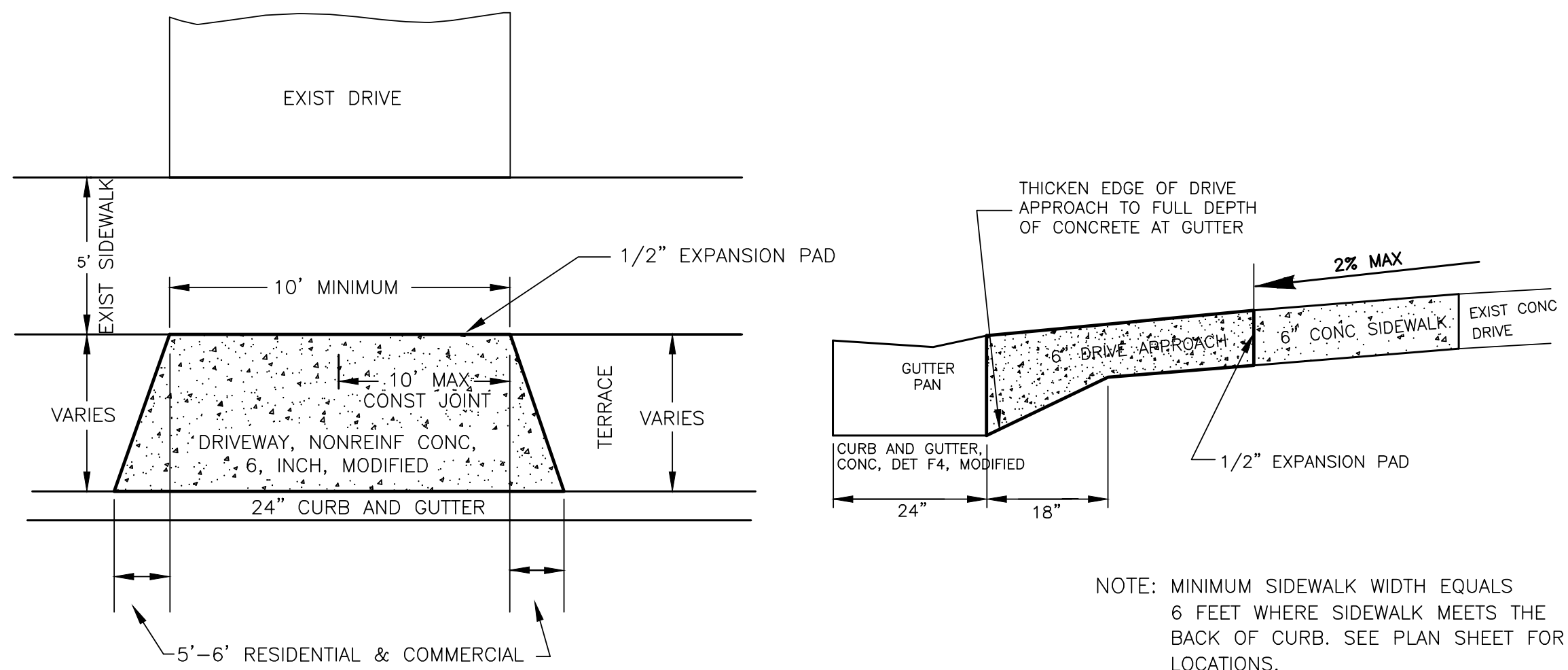
CITY OF MUSKEGON OFFICE OF THE CITY ENGINEER SECOND STREET HOUSTON TO MUSKEGON

NOTE:
 THE IMPROVEMENTS COVERED BY THESE PLANS SHALL BE DONE IN ACCORDANCE WITH THE MICHIGAN DEPARTMENT OF TRANSPORTATION 2020 STANDARD SPECIFICATIONS FOR CONSTRUCTION AND THE 2011 MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. THESE IMPROVEMENTS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE 2018 AASHTO GUIDELINES.

DRAWN	F. PEASE	FEB 2024	REVISION	SURVEY	F.P. J.L.	2023	H-92342
CHECKED			REVISION	AS-BUILT			PROJECT NO
APPROVED			REVISION	SCALE	NO SCALE		SHEET NO 1 OF 6

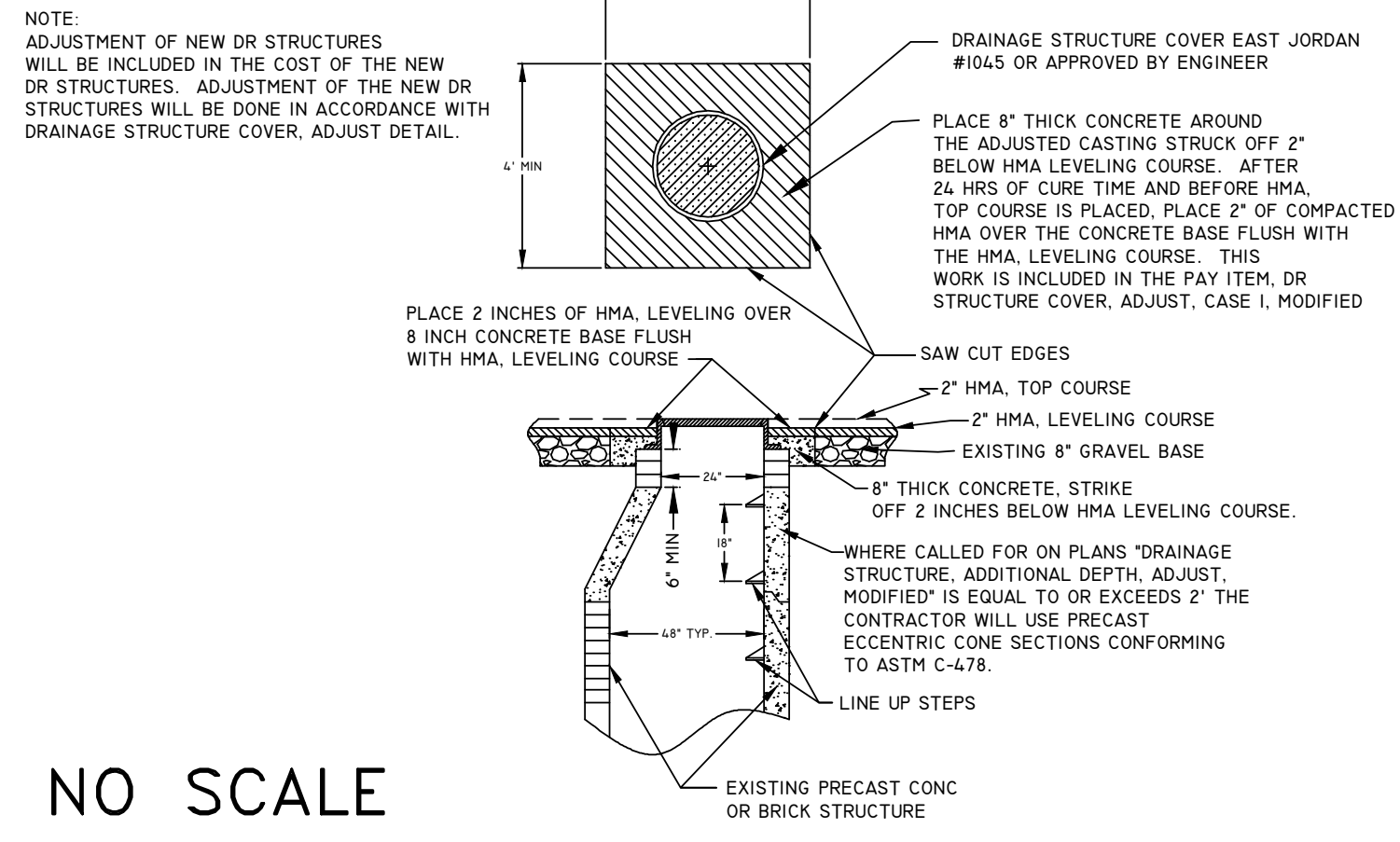
SECOND STREET, HOUSTON AVE TO MUSKEGON AVE CROSS SECTION AND DETAIL SHEET

TYPICAL DRIVE APPROACH DETAIL



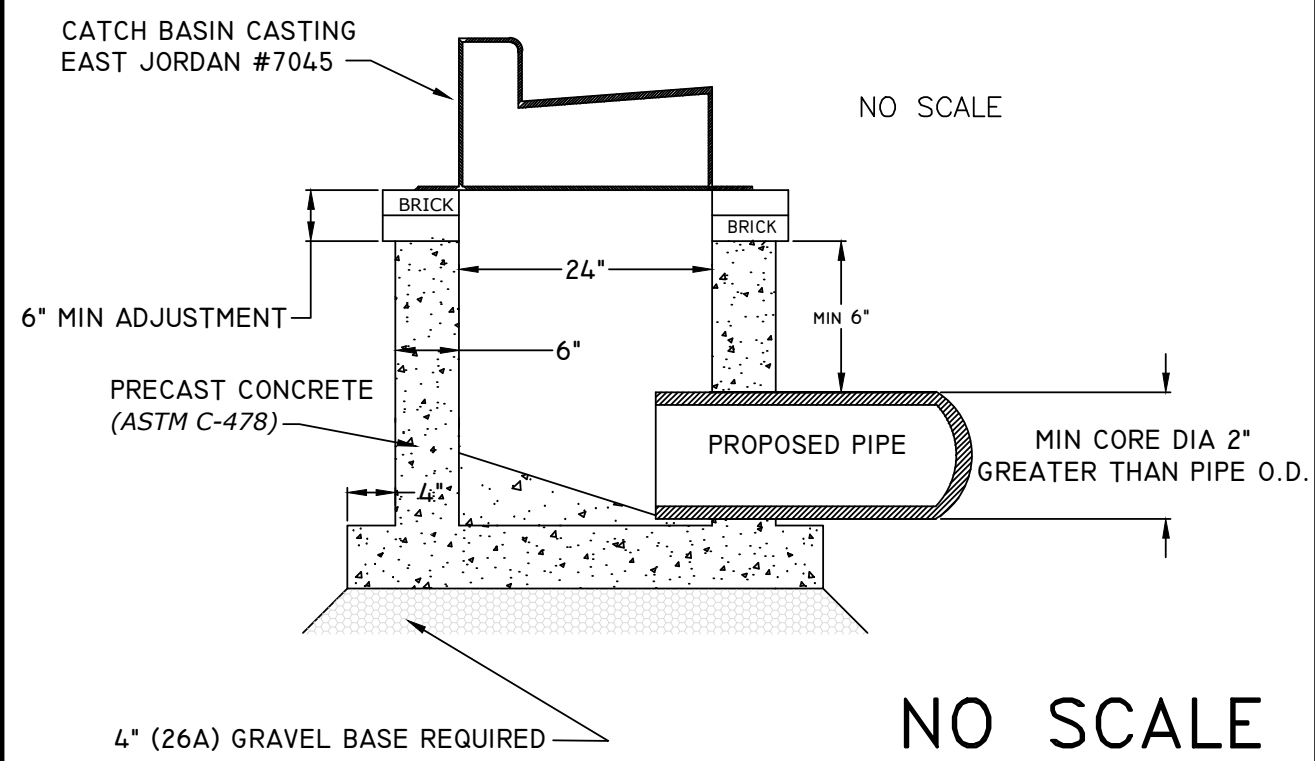
NOTE: MINIMUM SIDEWALK WIDTH EQUALS 6 FEET WHERE SIDEWALK MEETS THE BACK OF CURB. SEE PLAN SHEET FOR LOCATIONS.

DRAINAGE STRUCTURE COVER, ADJUST DETAIL



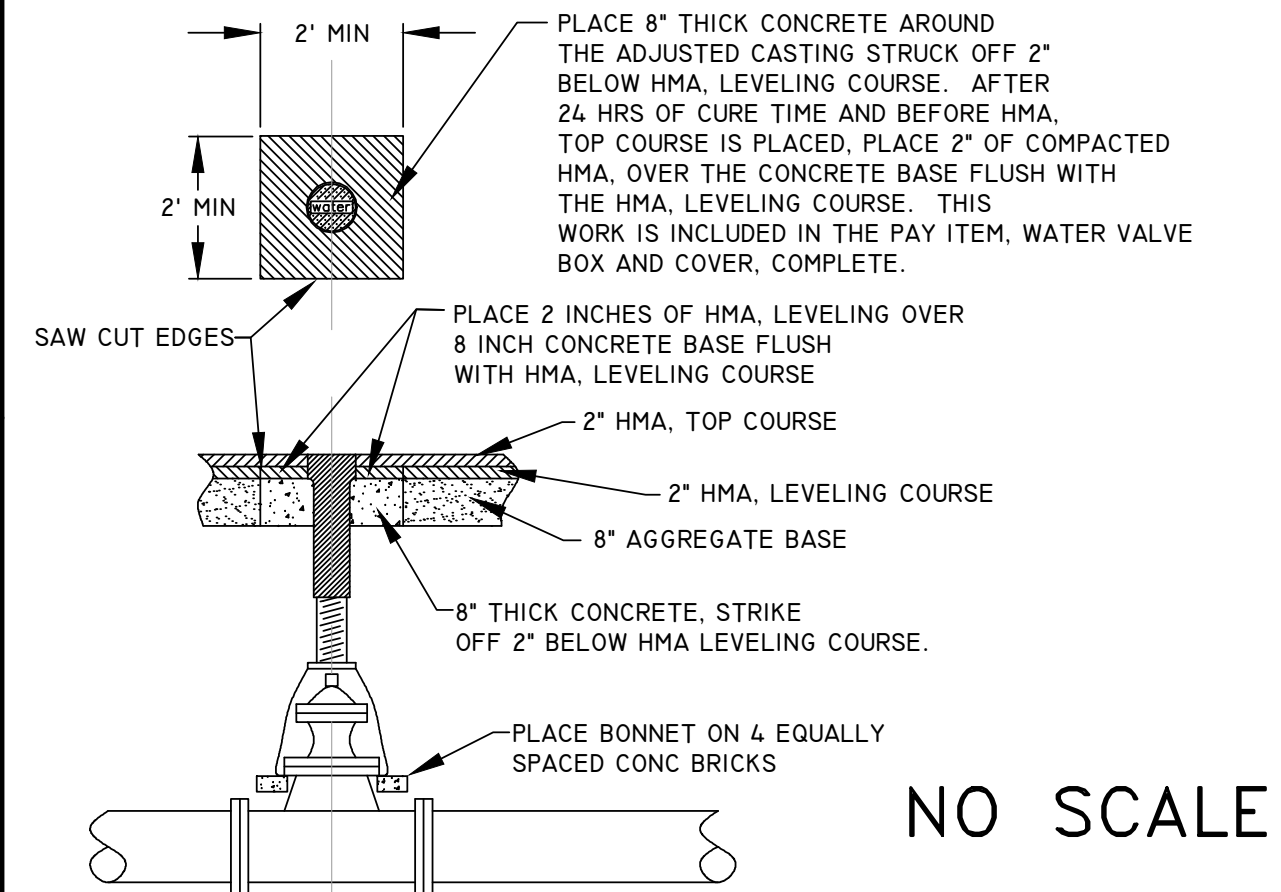
NO SCALE

DETAIL FOR: CATCH BASIN 2 FT DIA, SPECIAL DETAIL



NO SCALE

WATER VALVE BOX AND COVER, COMPLETE DETAIL

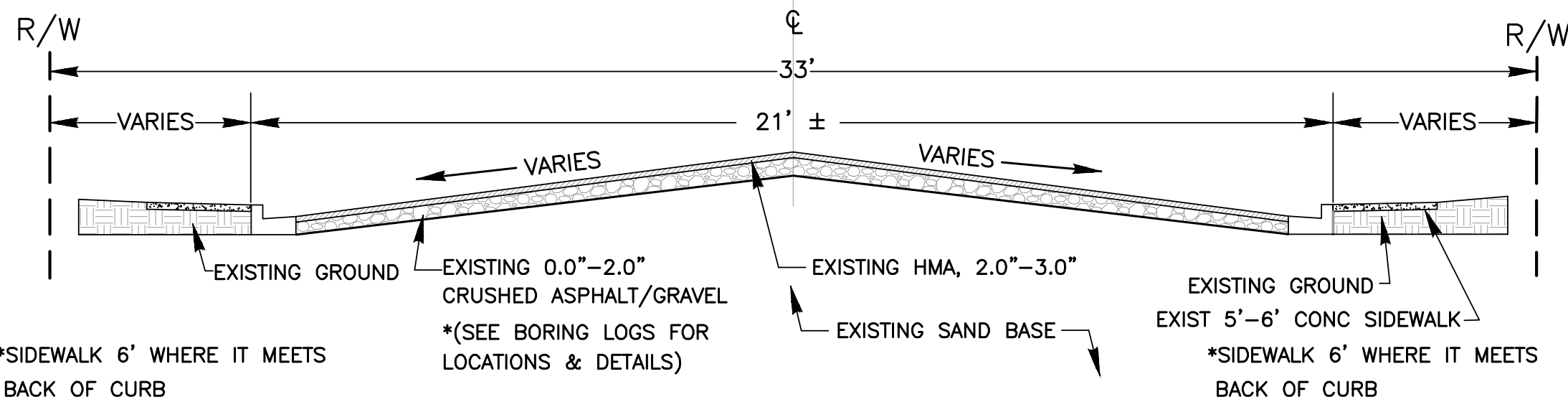


NO SCALE

GENERAL NOTES:

- UPON REQUEST AND APPROVAL, THE CONTRACTOR MAY OBTAIN A WATER SUPPLY FROM THE CITY OF MUSKEGON FIRE HYDRANTS AT NO COST, PROVIDED THAT THEY FOLLOW THE CONDITIONS OF THE CITY WATER DEPARTMENT.
- WHENEVER SMALL CASTINGS (STOP BOXES, METER PITS, MONITORING WELLS) ARE ENCOUNTERED WITHIN THE WORK AREA THEY SHALL BE ADJUSTED AT NO COST TO THE CITY. PAYMENT SHALL BE INCLUDED WITH THE LINE ITEM OF WORK BEING PERFORMED.
- FOR PROTECTION OF UNDERGROUND UTILITIES, THE CONTRACTOR SHALL CALL MISS DIG, (811) 1-800-482-7171, A MINIMUM OF 3 WORKING DAYS EXCLUDING SATURDAYS, SUNDAYS, AND HOLIDAYS PRIOR TO EXCAVATING IN THE VICINITY OF ALL UTILITY LINES. ALL MISS DIG PARTICIPATING MEMBERS WILL THUS BE NOTIFIED, THIS DOES NOT RELIEVE THE CONTRACTOR THE RESPONSIBILITY OF NOTIFYING OWNERS WHO MAY NOT BE PART OF THE MISS DIG ALERT SYSTEM.
- PUBLIC UTILITIES OF ALL TYPES HAVE BEEN SHOWN ON THE PLAN USING AVAILABLE INFORMATION, BUT ARE NOT GUARANTEED AS ACCURATE, OR THAT UTILITIES OTHER THAN THOSE SHOWN ARE NOT PRESENT. THE CONTRACTOR SHALL CALL MISS DIG 3 WORKING DAYS (EXCLUDING SAT., SUN., AND HOLIDAYS) BEFORE DIGGING (1-800-482-7171).
- EXISTING TRAFFIC CONTROL SIGNS THAT NEED TO BE REMOVED TO ALLOW THE CONTRACTOR TO WORK WILL BE REMOVED BY THE CONTRACTOR AND STORED IN A SAFE PLACE TO AVOID DAMAGE. THE CONTRACTOR SHALL THEN REINSTALL THE SIGNS IN THEIR ORIGINAL LOCATION OR AS DIRECTED BY THE ENGINEER. REMOVAL AND REPLACEMENT OF THE SIGNS WILL BE INCLUDED IN THE ITEM OF MINOR TRAFFIC DEVICES. SIGNS THAT ARE DAMAGED BY THE CONTRACTOR WILL BE REPLACED BY CITY FORCES, AND THE CONTRACTOR WILL PAY THE CITY FOR THE COST OF REPLACEMENT.
- THE CONTRACTOR SHALL SAW CUT ALL MEETS RELATIVE TO SIDEWALK OR PAVEMENT CONSTRUCTION UNLESS WAIVED BY THE ENGINEER. PAYMENT FOR SAW CUTTING SHALL BE INCLUDED IN THE PAYMENT FOR THE PAY ITEMS PAVT, REM, MODIFIED, AND SIDEWALK, REM. NO ADDITIONAL PAYMENT WILL ALLOWED FOR SAW CUTTING.
- IRRIGATION SYSTEMS AS MARKED OR STAKED DAMAGED THROUGH CARELESS WORK BY THE CONTRACTOR WILL BE REPAIRED BY THE CONTRACTOR AT NO COST TO THE CITY OF MUSKEGON. THE CITY OF MUSKEGON WILL PAY FOR RELOCATION OF IRRIGATION SYSTEMS DUE TO WIDENING OF ROAD OR IN CONFLICT WITH THE CONSTRUCTION OF UNDERGROUND WORK. PAYMENT WILL BE MADE BY A NEGOTIATED UNIT PRICE THROUGH A CONTRACT MODIFICATION. IT SHALL BE AT THE ENGINEER'S DISCRETION AS TO WHAT IRRIGATION REPAIR AND/OR RELOCATION IS THE RESULT OF CARELESS WORK BY THE CONTRACTOR OR THAT WHICH IS NECESSARY FOR THE CONSTRUCTION OF ROAD OR UTILITY WORK.
- THE CONTRACTOR SHALL PREVENT EROSION AND CONTROL SEDIMENTATION ASSOCIATED WITH THE PROJECT. KEEP SEDIMENTATION WITHIN THE RIGHT OF WAY AND OUT OF SURFACE WATERS, CONSTRUCT AND MAINTAIN TEMPORARY EROSION AND SEDIMENTATION CONTROLS, CONTROLS TO INCLUDE EROSION CONTROL, INLET PROTECTION, FABRIC DROPS, ON ALL INLET STRUCTURES, NEW AND EXISTING, AND INSTALL TEMPORARY EROSION, SEDIMENTATION CONTROLS AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL REMOVE ON A DAILY BASIS SOIL TRACKED ONTO EXISTING PAVED ROADS, (VACUUM METHODS ARE PREFERRED BUT BROOM SWEEPING IS ACCEPTABLE IF THE MATERIAL IS REMOVED) THE CONTRACTOR SHALL INSPECT ALL SOIL EROSION/SEDIMENTATION CONTROL MEASURES ON A WEEKLY BASIS OR AFTER EACH RAIN FALL EVENT, CLEAN REPAIR, OR REPLACE, AS NECESSARY, TO ENSURE PROPER FUNCTION. ALL SOIL EROSION/SEDIMENTATION CONTROLS SHALL REMAIN UNTIL ALL DISTURBED AREAS ARE STABILIZED. ALL SOIL EROSION/SEDIMENTATION CONTROL, EXCEPT FOR THE EROSION CONTROL, INLET PROTECTION, FABRIC DROP, SHALL BE INCLUDED WITH THE PAY ITEM "PAVT, REM, MODIFIED" NO OTHER PAYMENT SHALL BE MADE.

NOT TO SCALE
TYPICAL EXISTING X-SECTION
STATION 0+97-2+42.5
STATION 9+79.3-14+40.2



*SIDEWALK 6' WHERE IT MEETS BACK OF CURB

DRAINAGE STRUCTURE COVERS

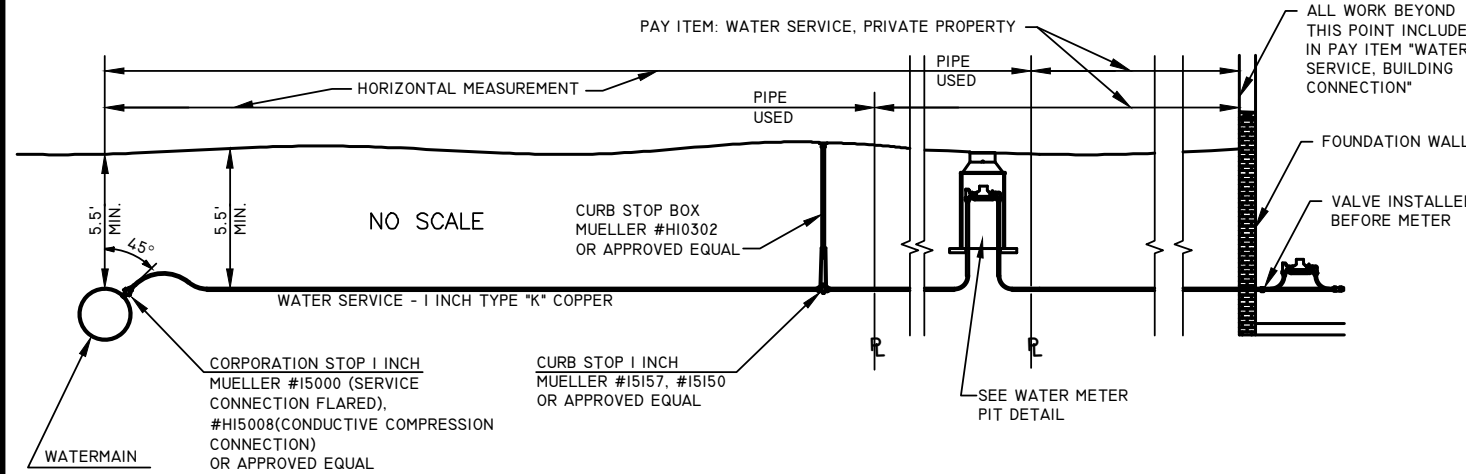
QUANTITY	DETAIL TYPE	CASTING DESCRIPTION	UNIT WEIGHT	TOTAL WEIGHT
3 EA	K	CATCH BASIN CASTING EAST JORDAN #7045 OR EQUAL	490#	1,470#
3 EA	D	CATCH BASIN CASTING EAST JORDAN #7065 OR EQUAL	335#	1,005#
4 EA	B	MANHOLE CASTING EAST JORDAN #1045 OR EQUAL TYPE A - SOLID COVER	330#	1,320#

SECOND ST. HMA APPLICATION

HMA MIX	RATE	PERFORMANCE GRADE	LIFT
HMA AEMH (TOP COURSE)	220# / SYD	64-28	2 INCH-LIFT AWM 250, MIN
HMA AEMH (LEVEL COURSE)	220# / SYD	64-28	2 INCH-LIFT

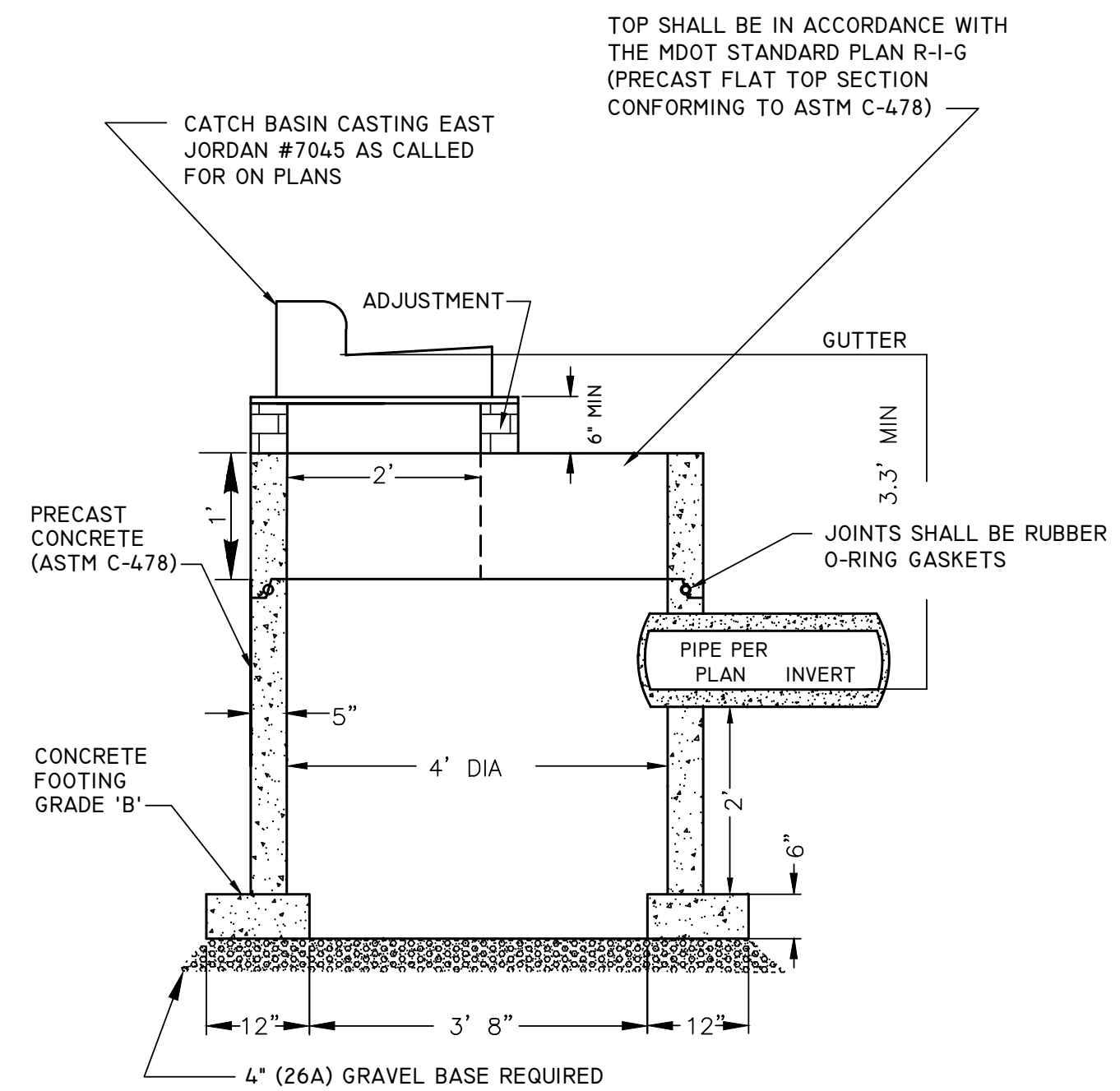
HMA BOND COAT: SS-1H AT 0.05 TO 0.15 GAL/SY, SHALL BE PLACED BETWEEN EACH LIFT. THE COST IS INCLUDED WITH THE HMA PAY ITEM.

DETAIL FOR: WATER SERVICE, 1 INCH



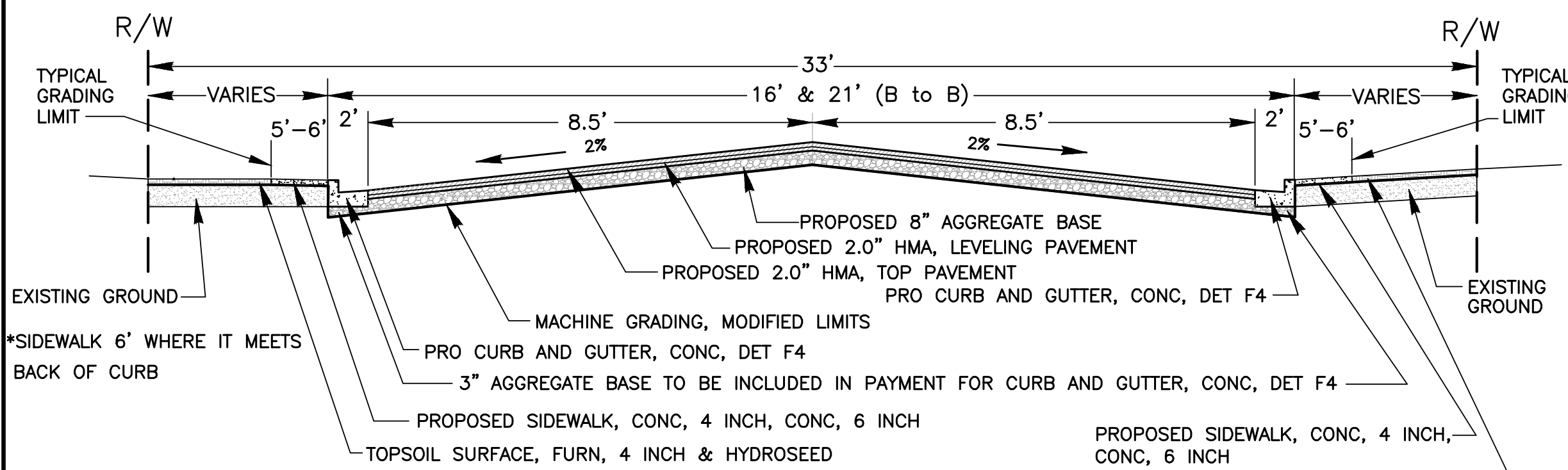
NO SCALE

DETAIL FOR: CATCH BASIN 4 FT DIA, SPECIAL DETAIL



NO SCALE

TYPICAL PROPOSED X-SECTION
STATION 0+97-2+42.2 (16' BB)
STATION 9+79.3-14+40.2 (21' BB)

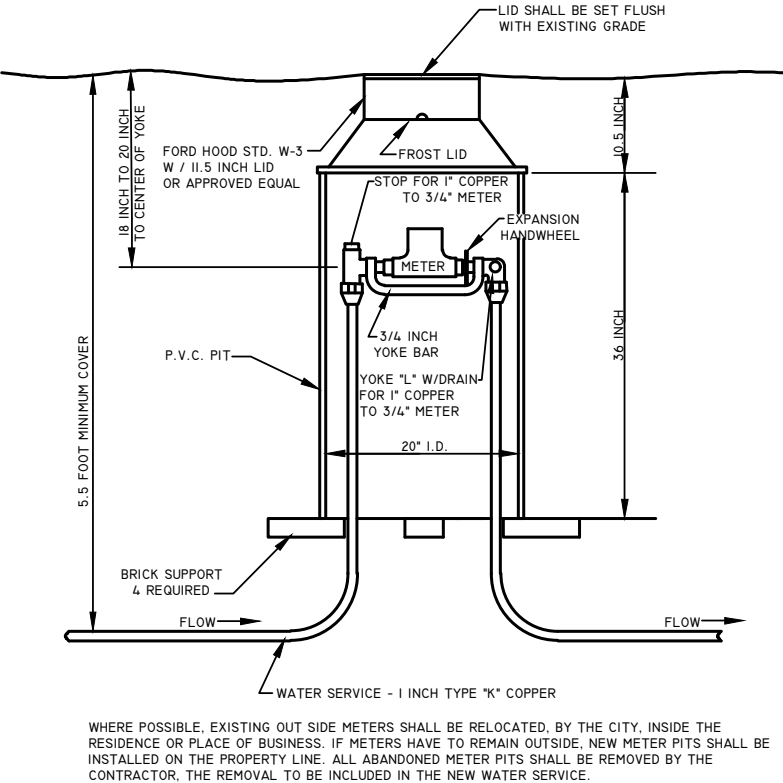


*SIDEWALK 6' WHERE IT MEETS BACK OF CURB

PROPOSED SIDEWALK, CONC, 4 INCH, CONC, 6 INCH

NOT TO SCALE

DETAIL FOR: METER PIT COMPLETE

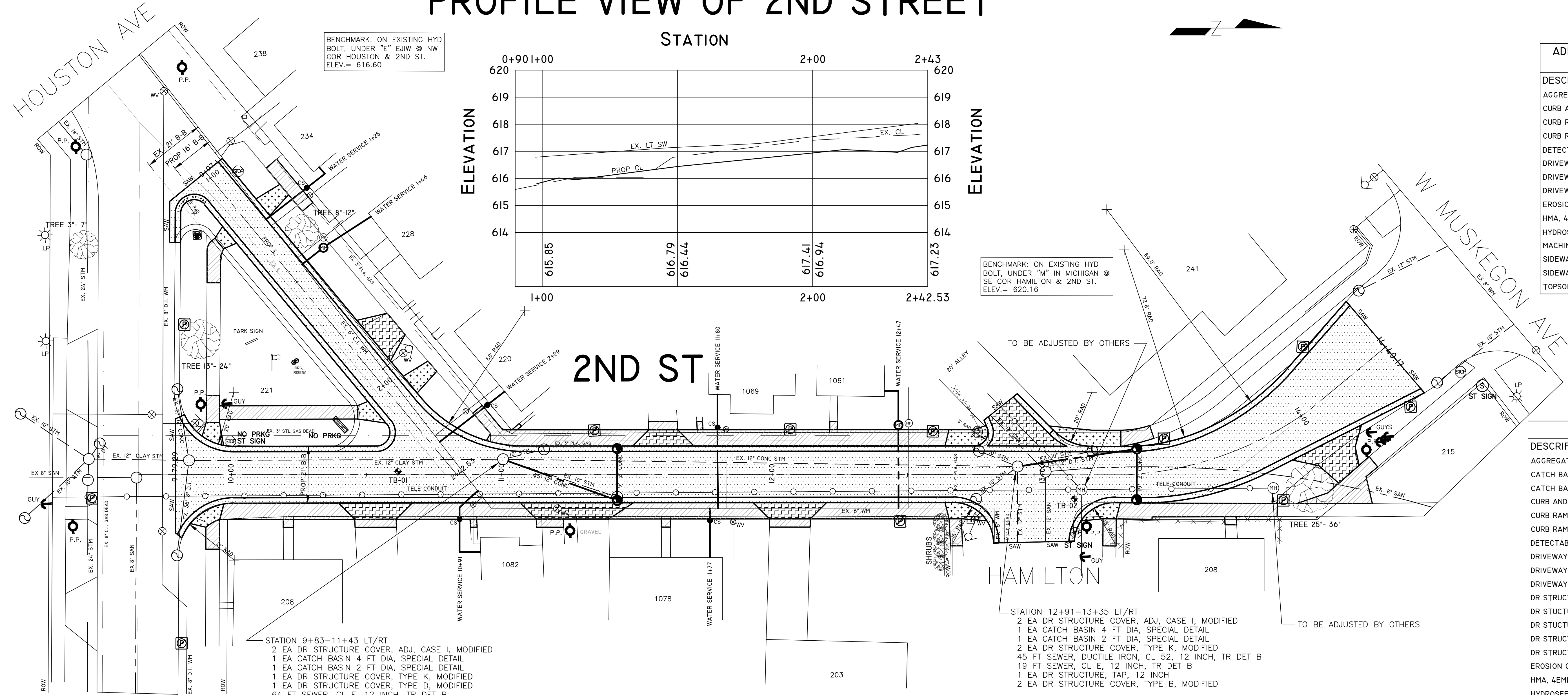


NO SCALE

CITY OF MUSKEGON OFFICE OF THE CITY ENGINEER		SECOND STREET, HOUSTON TO MUSKEGON	
DRAWN F. PEASE DEC 23 CHECKED APPROVED	REVISION REVISION REVISION	SURVEY F.P. J.L. 2023 AS-BUILT SCALE NO SCALE	PROJECT NO H-92342 SHEET NO 2 OF 6

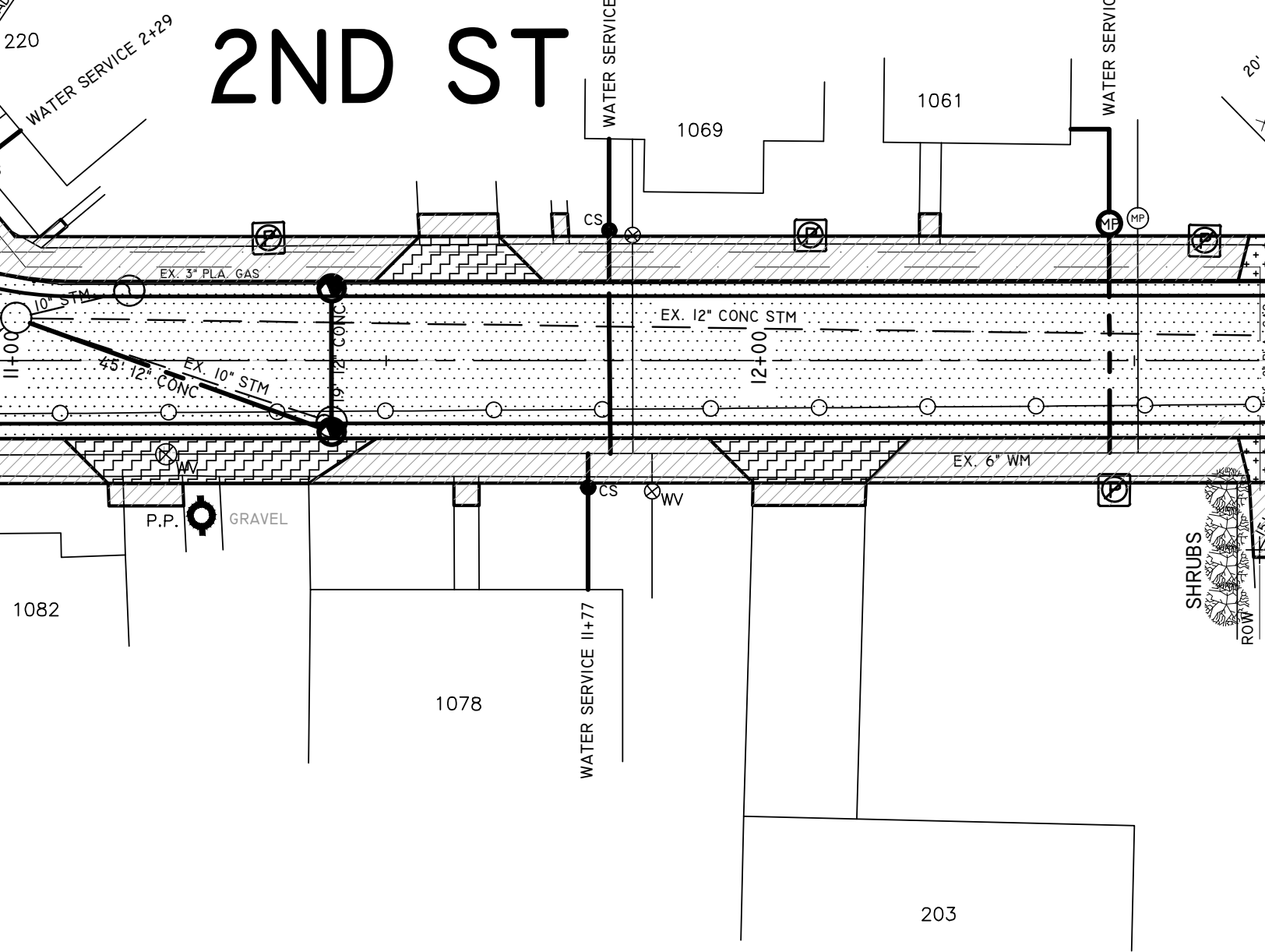
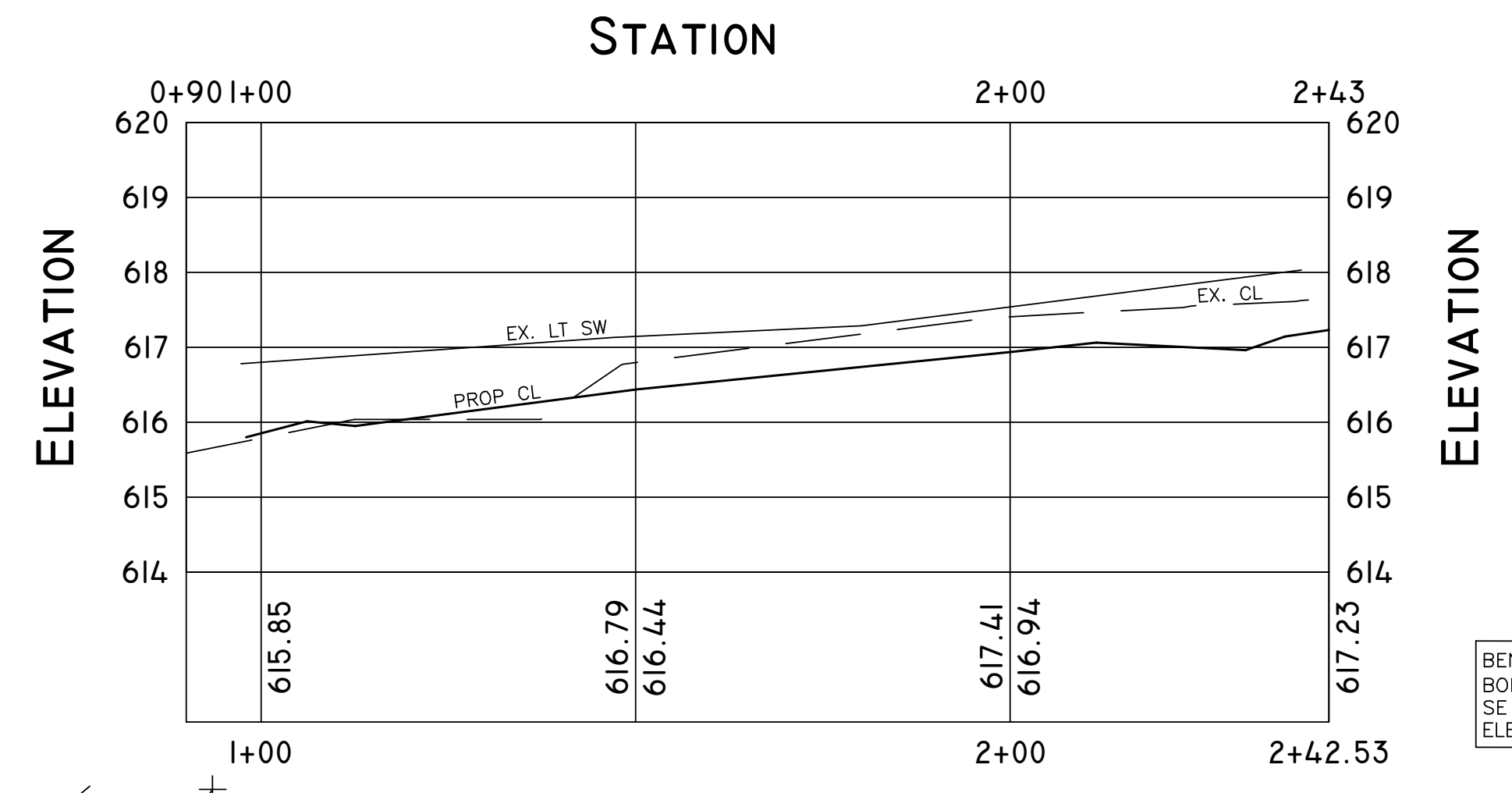


PROFILE VIEW OF 2ND STREET



BENCHMARK: ON EXISTING HYD BOLT, UNDER "E" EJIW @ NW COR HOUSTON & 2ND ST. ELEV.= 616.60

BENCHMARK: ON EXISTING HYD BOLT, UNDER "M" IN MICHIGAN @ SE COR HAMILTON & 2ND ST. ELEV.= 620.16



- STATION 9+83-11+43 LT/RT
- 2 EA DR STRUCTURE COVER, ADJ, CASE I, MODIFIED
 - 1 EA CATCH BASIN 4 FT DIA, SPECIAL DETAIL
 - 1 EA CATCH BASIN 2 FT DIA, SPECIAL DETAIL
 - 1 EA DR STRUCTURE COVER, TYPE K, MODIFIED
 - 1 EA DR STRUCTURE COVER, TYPE D, MODIFIED
 - 64 FT SEWER, CL E, 12 INCH, TR DET B
 - 1 EA DR STRUCTURE, TAP, 12 INCH
 - 2 EA DR STRUCTURE COVER, TYPE B, MODIFIED

- STATION 12+91-13+35 LT/RT
- 2 EA DR STRUCTURE COVER, ADJ, CASE I, MODIFIED
 - 1 EA CATCH BASIN 4 FT DIA, SPECIAL DETAIL
 - 1 EA CATCH BASIN 2 FT DIA, SPECIAL DETAIL
 - 2 EA DR STRUCTURE COVER, TYPE K, MODIFIED
 - 45 FT SEWER, DUCTILE IRON, CL 52, 12 INCH, TR DET B
 - 19 FT SEWER, CL E, 12 INCH, TR DET B
 - 1 EA DR STRUCTURE, TAP, 12 INCH
 - 2 EA DR STRUCTURE COVER, TYPE B, MODIFIED

ADDITIONAL QUANTITIES THIS SHEET STA 9+79 TO 14+40 & 0+97 TO 2+42

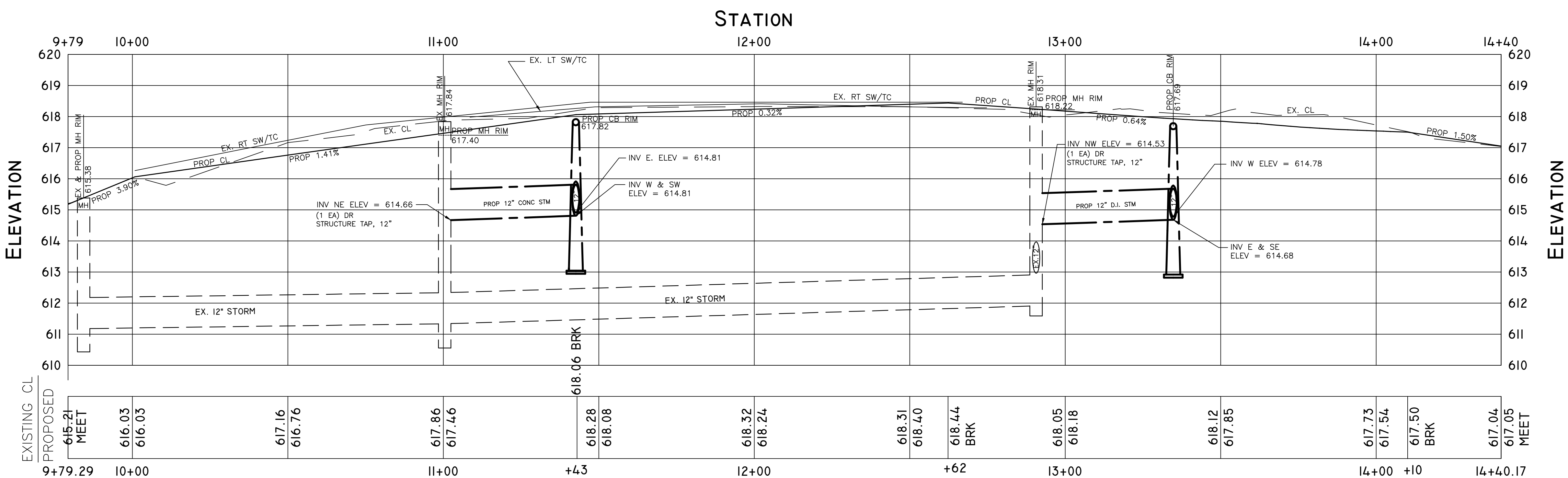
DESCRIPTION	QUANTITIES	UNIT
AGGREGATE BASE, 8 INCH	1285	SYD
CURB AND GUTTER, CONC, DET F4, MODIFIED	1002	FT
CURB RAMP, CONC, 6 INCH	662	SF
CURB RAMP OPENING, CONC	127	FT
DETECTABLE WARNING SURFACE	98	FT
DRIVEWAY, NONREINF CONC, 6 INCH, MODIFIED	106	SYD
DRIVEWAY, NONREINF CONC, 8 INCH, MODIFIED	32	SYD
DRIVEWAY OPENING, CONC, DET M	39	FT
EROSION CONTROL, INLET PROTECTION, FABRIC DROP	9	EA
HMA, 4EML	304	TON
HYDROSEEDING	603	SYD
MACHINE GRADING, MODIFIED	5.8	STA
SIDEWALK, CONC, 4 INCH	3137	SF
SIDEWALK, CONC, 6 INCH	349	SF
TOPSOIL SURFACE, FURN, 4 INCH	603	SYD

NOTE: THERE WILL BE APPROXIMATELY 505 CYD OF EXCAVATION INCLUDED UNDER THE MACHINE GRADING, MODIFIED PAY ITEM

TOTAL QUANTITIES THIS SHEET

DESCRIPTION	QUANTITIES	UNIT
AGGREGATE BASE, 8 INCH	1285	SYD
CATCH BASIN 4 FT DIA, SPECIAL DETAIL	2	EA
CATCH BASIN 2 FT DIA, SPECIAL DETAIL	2	EA
CURB AND GUTTER, CONC, DET F4, MODIFIED	1002	FT
CURB RAMP, CONC, 6 INCH	662	SF
CURB RAMP OPENING, CONC	127	FT
DETECTABLE WARNING SURFACE	98	FT
DRIVEWAY, NONREINF CONC, 6 INCH, MODIFIED	106	SYD
DRIVEWAY, NONREINF CONC, 8 INCH, MODIFIED	32	SYD
DRIVEWAY OPENING, CONC, DET M	39	FT
DR STRUCTURE COVER, ADJ, CASE I, MODIFIED	4	EA
DR STRUCTURE COVER, TYPE K, MODIFIED	3	EA
DR STRUCTURE COVER, TYPE D, MODIFIED	1	EA
DR STRUCTURE COVER, TYPE B, MODIFIED	4	EA
DR STRUCTURE, TAP, 12 INCH	2	EA
EROSION CONTROL, INLET PROTECTION, FABRIC DROP	9	EA
HMA, 4EML	304	TON
HYDROSEEDING	603	SYD
MACHINE GRADING, MODIFIED	5.8	STA
SEWER, CL E, 12 INCH, TR DET B	83	FT
SEWER, DUCTILE IRON, CL 52, 12 INCH, TR DET B	45	FT
SIDEWALK, CONC, 4 INCH	3137	SF
SIDEWALK, CONC, 6 INCH	349	SF
TOPSOIL SURFACE, FURN, 4 INCH	603	SYD

PROFILE VIEW OF 2ND STREET

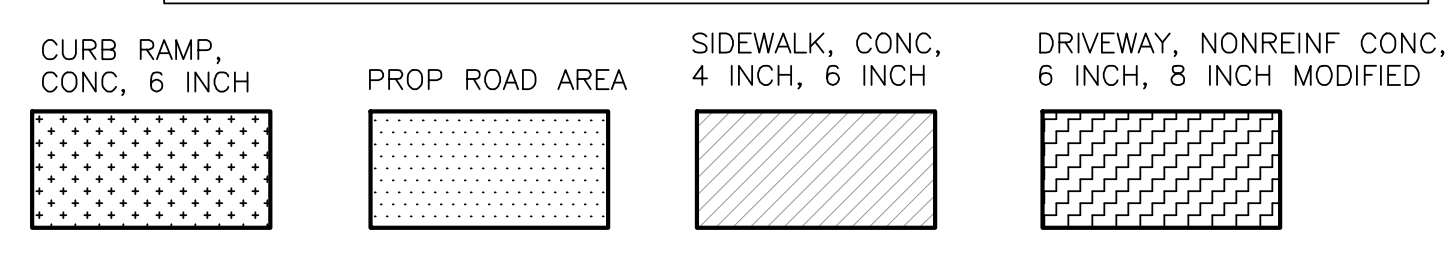


I INCH WATER SERVICE SCHEDULE PRIVATE

STATION	I INCH CORP	I INCH TYPE "K" COPPER	I INCH CURB STOP	METER PIT	PRIVATE PROPERTY (FT)	BUILDING CONNECTION
1+25 LT	1 EACH	19 FT	1 EACH		13	1 EACH
1+46 LT	1 EACH	10 FT		1 EACH	21	1 EACH
2+29 LT	1 EACH	22 FT	1 EACH		8	1 EACH
10+91 RT	1 EACH	14 FT	1 EACH		20	1 EACH
11+77 RT	1 EACH	5 FT	1 EACH		14	1 EACH
11+80 LT	1 EACH	29 FT	1 EACH		14	1 EACH
12+47 LT	1 EACH	31 FT		1 EACH	18	1 EACH

TOTAL WATERMAIN QUANTITIES THIS SHEET

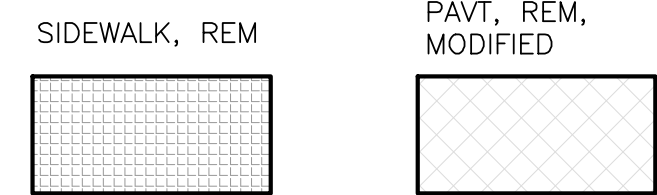
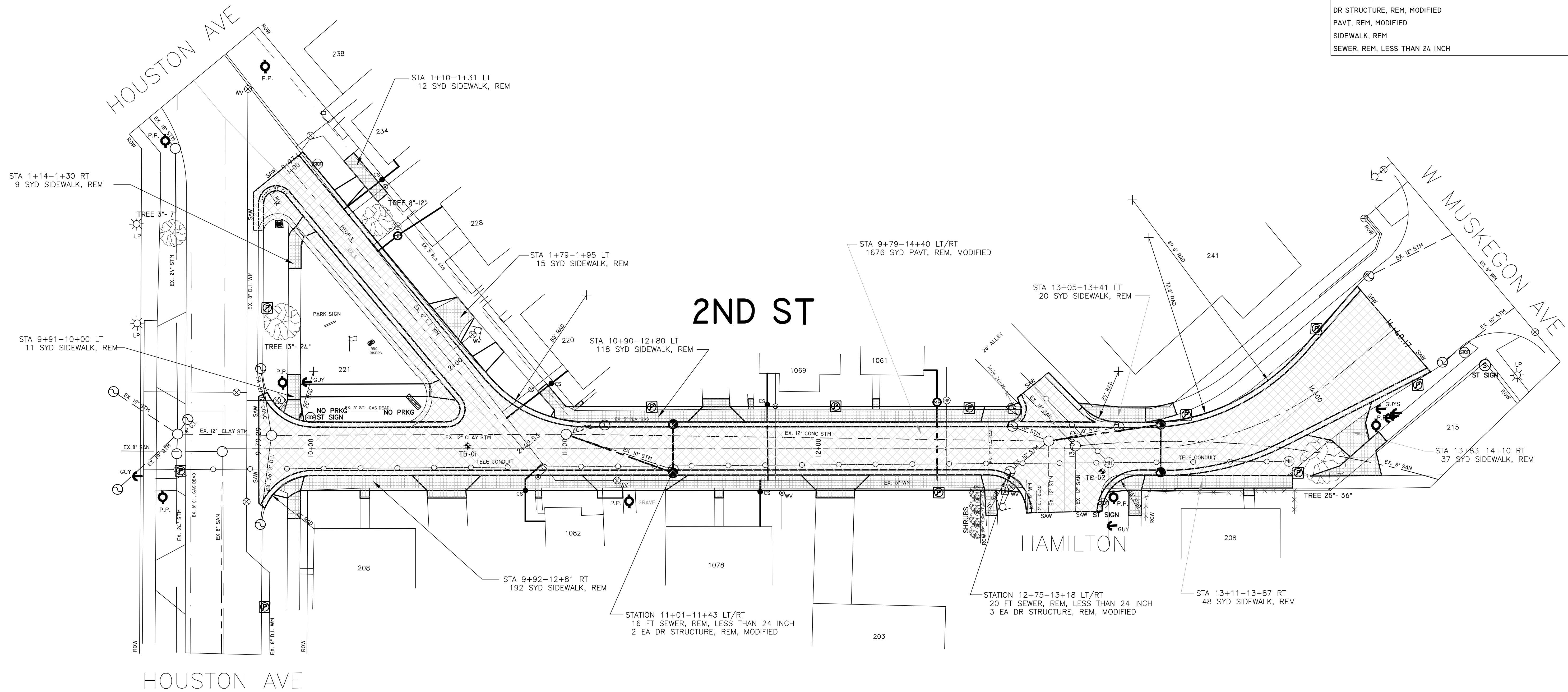
DESCRIPTION	QUANTITIES	UNIT
WATER SERVICE, BUILDING CONNECTION, 1 INCH	7	EA
CORPORATION STOP, 1 INCH	7	EA
CURB STOP AND BOX, 1 INCH	5	EA
METER PIT COMPLETE	2	EA
WATER SERVICE, 1 INCH, COPPER TYPE K	130	FT
WATER SERVICE, PRIVATE PROPERTY, 1 INCH	108	FT



PAVEMENT & SIDEWALK REMOVAL PLAN

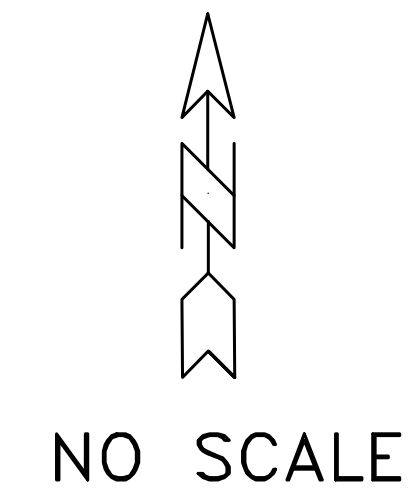


TOTAL QUANTITIES THIS SHEET		
DESCRIPTION	QUANTITIES	UNIT
DR STRUCTURE, REM, MODIFIED	5	EA
PAVT, REM, MODIFIED	1676	SYD
SIDEWALK, REM	462	SYD
SEWER, REM, LESS THAN 24 INCH	36	FT



CITY OF MUSKEGON OFFICE OF THE CITY ENGINEER				DEMOLITION AND REMOVAL PLAN SECOND STREET, HOUSTON TO MUSKEGON			
DRAWN	F. PEASE	FEB 24	REVISION	SURVEY	F. PEASE	2023	H-92342
CHECKED			REVISION	AS-BUILT			PROJECT NO.
APPROVED			REVISION	SCALE	NO SCALE		SHEET NO. 4 OF 6

TRAFFIC CONTROL DETAILS



ESTIMATED QUANTITIES SIGN, TYPE B TEMPORARY				
SIGN	DESCRIPTION	QUANTITY	AREA	TOTAL AREA
G20-2	END ROAD WORK	4	8 SFT	32 SFT
R5-18C	WORK ZONE BEGINS	4	16 SFT	64 SFT
R11-2	ROAD CLOSED	6	10 SFT	60 SFT
R9-9	SIDEWALK CLOSED	12	12.5 SFT	150 SFT
W20-3	ROAD CLOSED AHEAD	2	16 SFT	32 SFT
W21-4	ROAD WORK AHEAD	6	16 SFT	96 SFT
TOTAL				434.0 SFT

ESTIMATED QUANTITIES SIGN, TYPE B TEMPORARY, SPECIAL				
SIGN	DESCRIPTION	QUANTITY	AREA	TOTAL AREA
SS-1	SECOND ST.	8	8 SFT	64 SFT
TOTAL				64 SFT

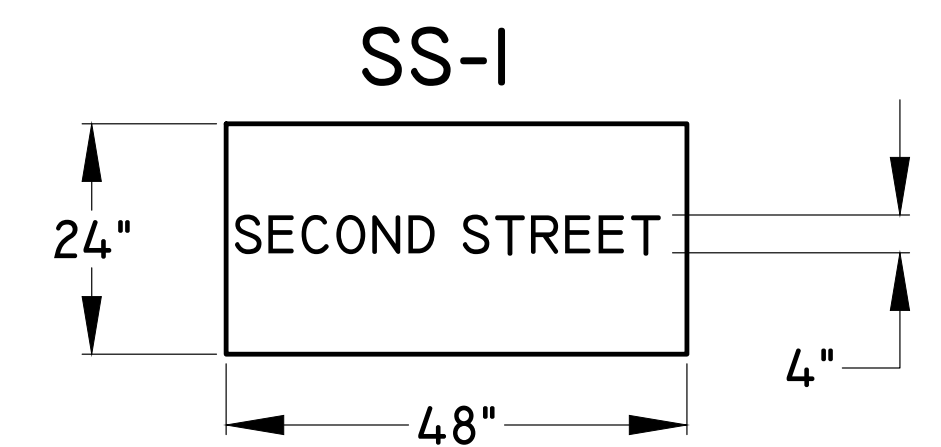
ESTIMATED TRAFFIC CONTROL DEVICES		
MINOR TRAFFIC DEVICES		
BARRICADE, TYPE III, HIGH INTENSITY, DOUBLE SIDED, LIGHTED, FURN	1	LS
BARRICADE, TYPE III, HIGH INTENSITY, DOUBLE SIDED, LIGHTED, OPER	6	EA
PLASTIC DRUM, FLUORESCENT, FURN	6	EA
PLASTIC DRUM, FLUORESCENT, OPER	24	EA
SIGN, TYPE B, TEMP, PRISMATIC, FURN	434	SFT
SIGN, TYPE B, TEMP, PRISMATIC, OPER	434	SFT
SIGN, TYPE B, TEMP, PRISMATIC, SPECIAL, FURN	64	SFT
SIGN, TYPE B, TEMP, PRISMATIC, SPECIAL, OPER	64	SFT
MAINTENANCE GRAVEL, LM	50	CYD
DUST PALLIATIVE, APPLIED	25	TON
PEDESTRIAN TYPE II BARRICADE, TEMP	12	EA

TRAFFIC CONTROL NOTES:

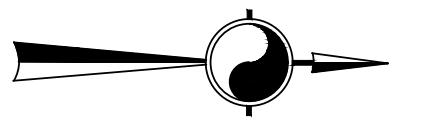
1. THE CONTRACTOR SHALL MAINTAIN ACCESS TO BUSINESSES, RESIDENCES, AND CROSS STREETS WITH MAINTENANCE GRAVEL AS DIRECTED BY THE ENGINEER. CONTRACTOR MAY USE THE EXISTING AGGREGATE BASE FOR MAINTENANCE GRAVEL OR HMA MILLINGS. AGGREGATE OR HMA MILLINGS USED TO MAINTAIN TRAFFIC WILL BE PAID AT THE BID PROPOSAL UNIT PRICE FOR MAINTENANCE GRAVEL.
2. IN ADDITION TO THE 24 PLASTIC BARRELS USED FOR CHANNELING DEVICES AND ROAD CLOSURES, THE CONTRACTOR WILL SUPPLY AN ADDITIONAL 25 PLASTIC BARRELS FOR MARKING TEMPORARY DRIVES, BLOCKING EXISTING DRIVES, AND SIDEWALKS, ETC. AS DIRECTED BY THE ENGINEER.
3. PLEASE KEEP THE SIDEWALK RAMPS MAINTAINED AT SECOND & HOUSTON AVE. HAMILTON & SECOND, BY USING MAINTENANCE GRAVEL AS NECESSARY TO ACCOMMODATE PEDESTRIAN TRAFFIC.



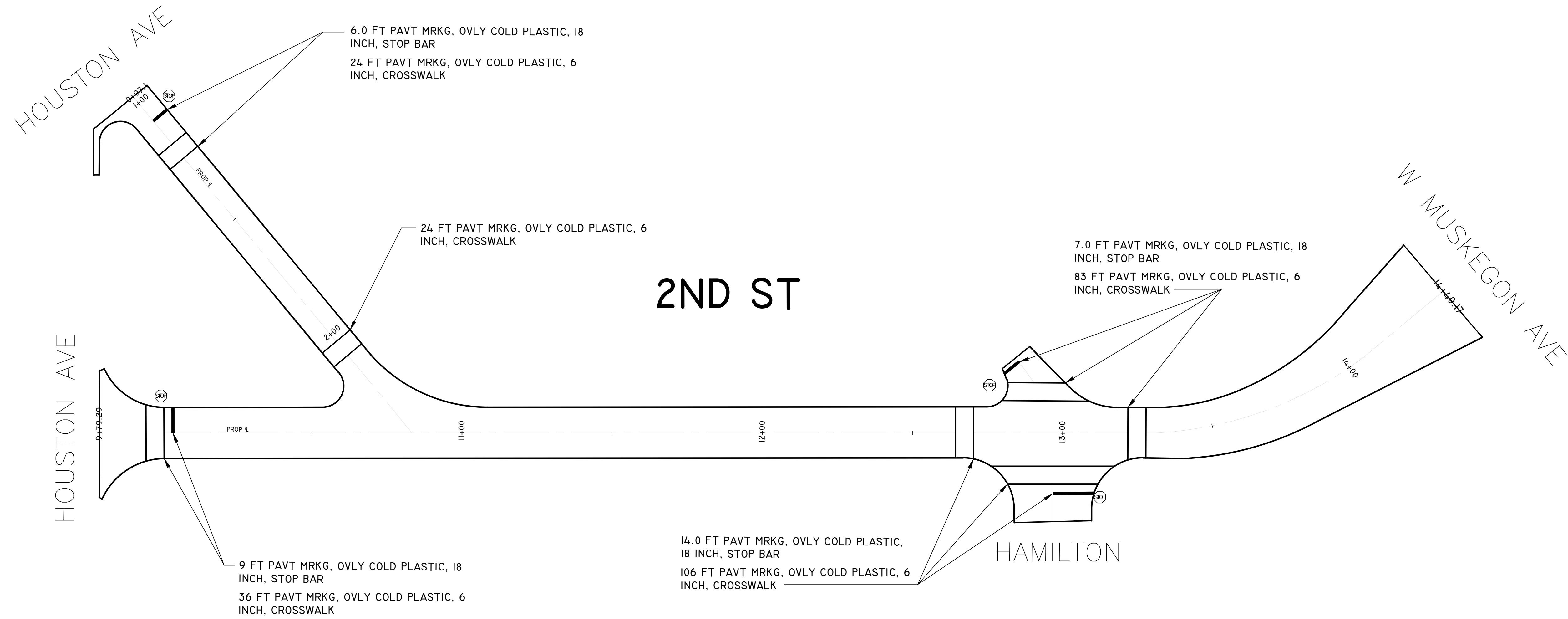
SPECIAL SIGNS



PAVEMENT MARKING DETAIL



TOTAL PERMANENT PAVEMENT MARKING QUANTITIES		
PAVT MRKG, OVLY COLD PLASTIC, 18 INCH, STOP BAR	36	FT
PAVT MRKG, OVLY COLD PLASTIC, 6 INCH, CROSSWALK	273	FT



CITY OF MUSKEGON		SECOND STREET, HOUSTON TO MUSKEGON	
OFFICE OF THE CITY ENGINEER			
DRAWN F. PEASE FEB 24	REVISION	SURVEY F. PEASE 2023	PROJECT NO. H-92342
CHECKED	REVISION	AS-BUILT	PROJECT NO.
APPROVED	REVISION	SCALE NO SCALE	SHEET NO 6 OF 6