

MUSKEGON LAKE A.O.C. HABITAT RESTORATION AT RYERSON CREEK

WEST MICHIGAN SHORELINE REGIONAL DEVELOPMENT COMMISSION

MUSKEGON, MICHIGAN

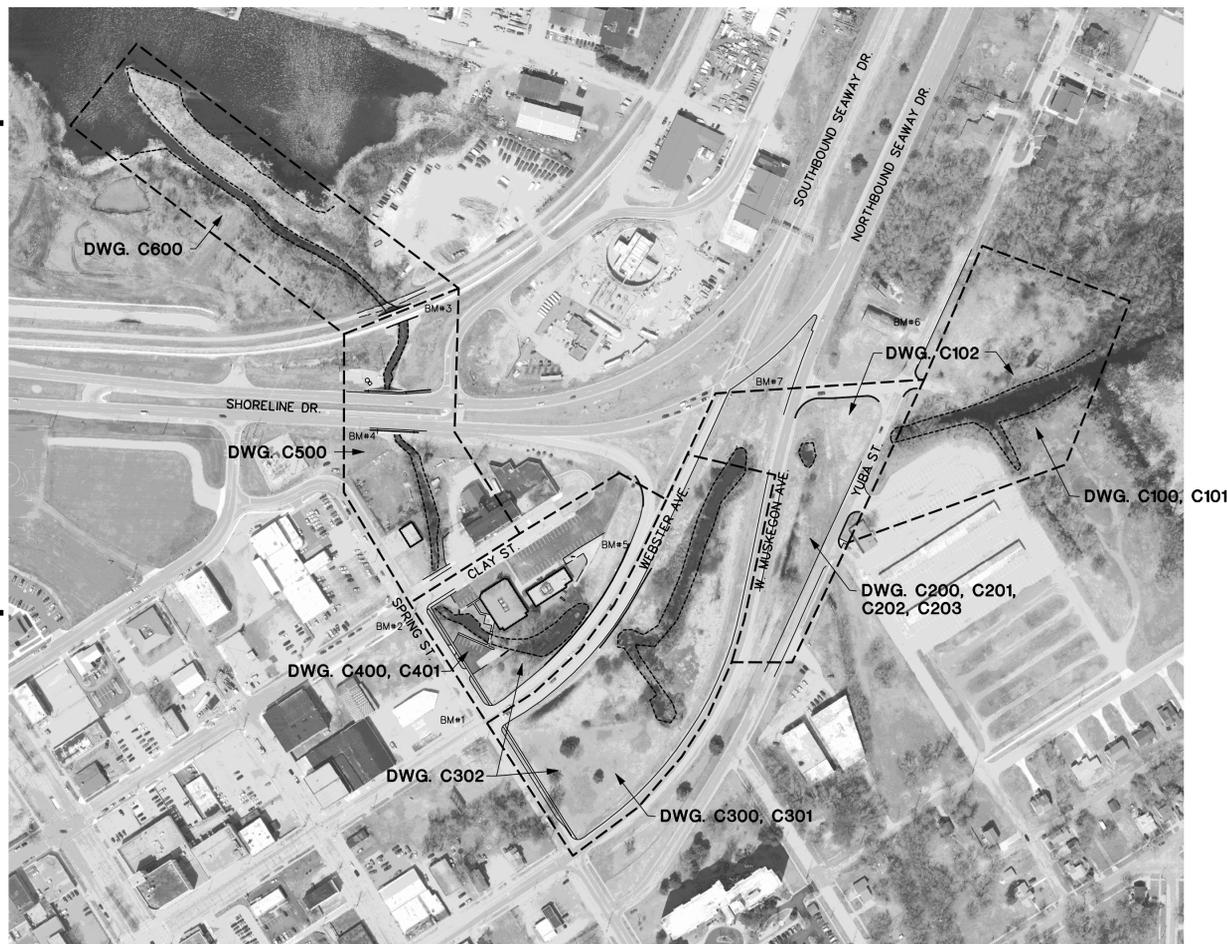
CITY OF MUSKEGON
PROJECT: H-1673 (90139)

DRAWING INDEX

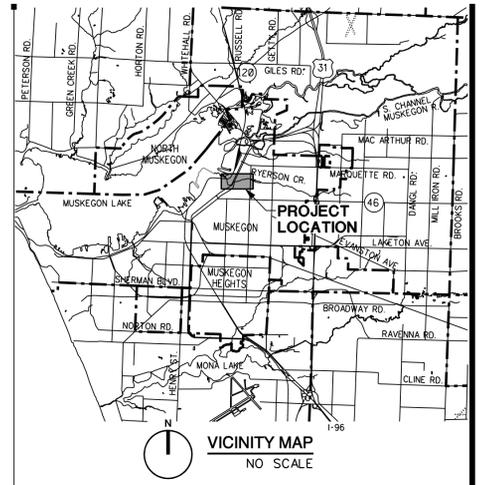
- C000 TITLE SHEET
- C100 RYERSON CREEK CORRIDOR & GREEN ACRES PARK WETLAND RESTORATION GRADING PLAN
- C101 RYERSON CREEK CORRIDOR & GREEN ACRES PARK PLANTING PLAN
- C102 EROSION CONTROL PLAN EAST OF W. MUSKEGON AVENUE
- C200 YUBA STREET & W. MUSKEGON AVENUE CULVERT REPLACEMENT & WETLAND RESTORATION GRADING & UTILITY PLAN
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- C400 UNITED WAY PROPERTY HABITAT RESTORATION
- C401 UNITED WAY PROPERTY HABITAT RESTORATION LANDSCAPE PLAN
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- C500 HAVIT PROPERTY HABITAT RESTORATION
- C600 DAVID TRUST PROPERTY HABITAT RESTORATION
- C700 ROAD CLOSURE DETOUR PLANS

BENCHMARKS

- BM#1 ELEV. 584.61
TOP OF N.E. FLANGE BOLT UNDER 'E', OF HYDRANT AT N.W. QUADRANT OF SPRING ST. & WEBSTER ST.
- BM#2 ELEV. 588.15
TOP OF S.W. FLANGE BOLT UNDER 'E', OF HYDRANT AT S.W. QUADRANT OF CLAY ST & SPRING ST.
- BM#3 ELEV. 588.34
COUNTY SURVEY MONUMENT, 50'± W. OF OTTAWA, 15'± E. OF RAILROAD, 85' N. OF RAILROAD BRIDGE
- BM#4 ELEV. 594.38
TOP OF S.W. CORNER OF BRIDGE ABUTMENT, E. SIDE OF SHORELINE DR.
- BM#5 ELEV. 589.99
TOP OF N.W. CORNER OF GUARD RAIL, W. SIDE OF WEBSTER ST.
- BM#6 ELEV. 586.58
TOP OF N.W. FLANGE BOLT UNDER 'E', OF HYDRANT ON W. SIDE OF YUBA ST., 180'± N. OF EASTERN ST.
- BM#7 ELEV. 594.05
TOP OF SOUTHERLY ANCHOR BOLT FOR MAST ARM AT SEAWAY DR. & MUSKEGON ST.



DRAWING INDEX MAP
1"=200'



CIVIL ENGINEER
PROGRESSIVE AE
1811 4 MILE ROAD NE
GRAND RAPIDS, MI 49525
ATTN: MICHAEL OEZER, P.E.
TEL: 616-361-2664
FAX: 616-361-1493

ENVIRONMENTAL CONSULTANT
KING & MCGREGOR ENVIRONMENTAL, INC.
2520 WOODMEADOW DRIVE SE
GRAND RAPIDS, MI 49546
ATTN: MATT MCGREGOR
TEL: 616-957-1231
FAX: 616-957-2198

MDOT MUSKEGON TRANSPORTATION SERVICE CENTER
2225 OLTHOFF DRIVE
MUSKEGON, MI 49444
ATTN: TIM JUDGE, DIRECTOR
TEL: 231-777-3451
FAX: 231-777-3621

WATER/SEWER
CITY OF MUSKEGON DEPARTMENT OF PUBLIC WORKS
1350 E. KEATING
MUSKEGON, MI 49442
ATTN: DAVE SMITH
TEL: 231-724-4100
FAX: 231-722-4188

SANITARY SEWER
MUSKEGON COUNTY WASTEWATER SYSTEM
8301 WHITE ROAD
MUSKEGON, MI 49442
ATTN: STEVE BARNARD
TEL: 231-724-3440

ELECTRIC
CONSUMERS ENERGY CO.
2021 HOYT STREET
MUSKEGON HEIGHTS, MI 49444
ATTN: MICHELLE PETERSON
TEL: 231-727-6561

GAS SERVICE
DTE/MICHCON
2359 OLTHOFF DRIVE
MUSKEGON, MI 49444
ATTN: PAUL LARSEN
TEL: 231-777-4060

TELEPHONE
FRONTIER COMMUNICATIONS
860 TERRACE STREET
MUSKEGON, MI 49440
ATTN: CHRIS BIESEL
TEL: 231-727-1642

CABLE
COMCAST CABLE
3500 PATTERSON AVENUE SE
GRAND RAPIDS, MI 49512
ATTN: JIM ZAWACKI
TEL: 616-575-0501

CONTRACTOR
JACKSON-MERKEY CONTRACTORS, INC.
565 E. WESTERN AVENUE
MUSKEGON, MI 49442
TEL: 231-728-9344



ENVIRONMENTAL CONSULTANT

King & MacGregor Environmental Inc.
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GRAND RAPIDS, MI 49546
TEL: 616-957-1231
FAX: 616-957-2198



progressive ae
1811 4 Mile Rd N.E., Grand Rapids, MI 49525
616 361 2664 OFFICE 616 361 1493 FAX
www.progressiveae.com

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PROJECT LDR

MUSKEGON LAKE A.O.C. HABITAT RESTORATION AT RYERSON CREEK
WEST MICHIGAN SHORELINE REGIONAL DEVELOPMENT COMMISSION
MUSKEGON, MICHIGAN

AS-BUILT
BIDS & CONSTRUCTION
OWNER REVIEW
MDEQ REVIEW
OWNER REVIEW

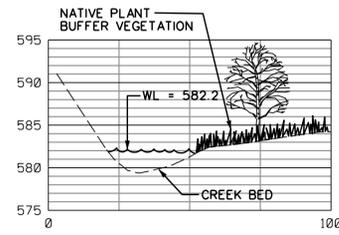
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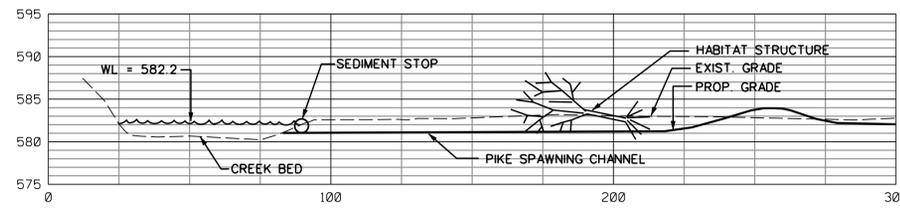
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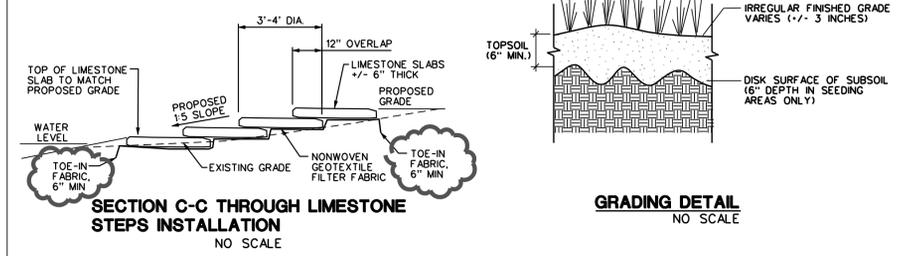
TITLE SHEET



SECTION A-A
HORIZ. SCALE: 1" = 30'
VERT. SCALE: 1" = 10'

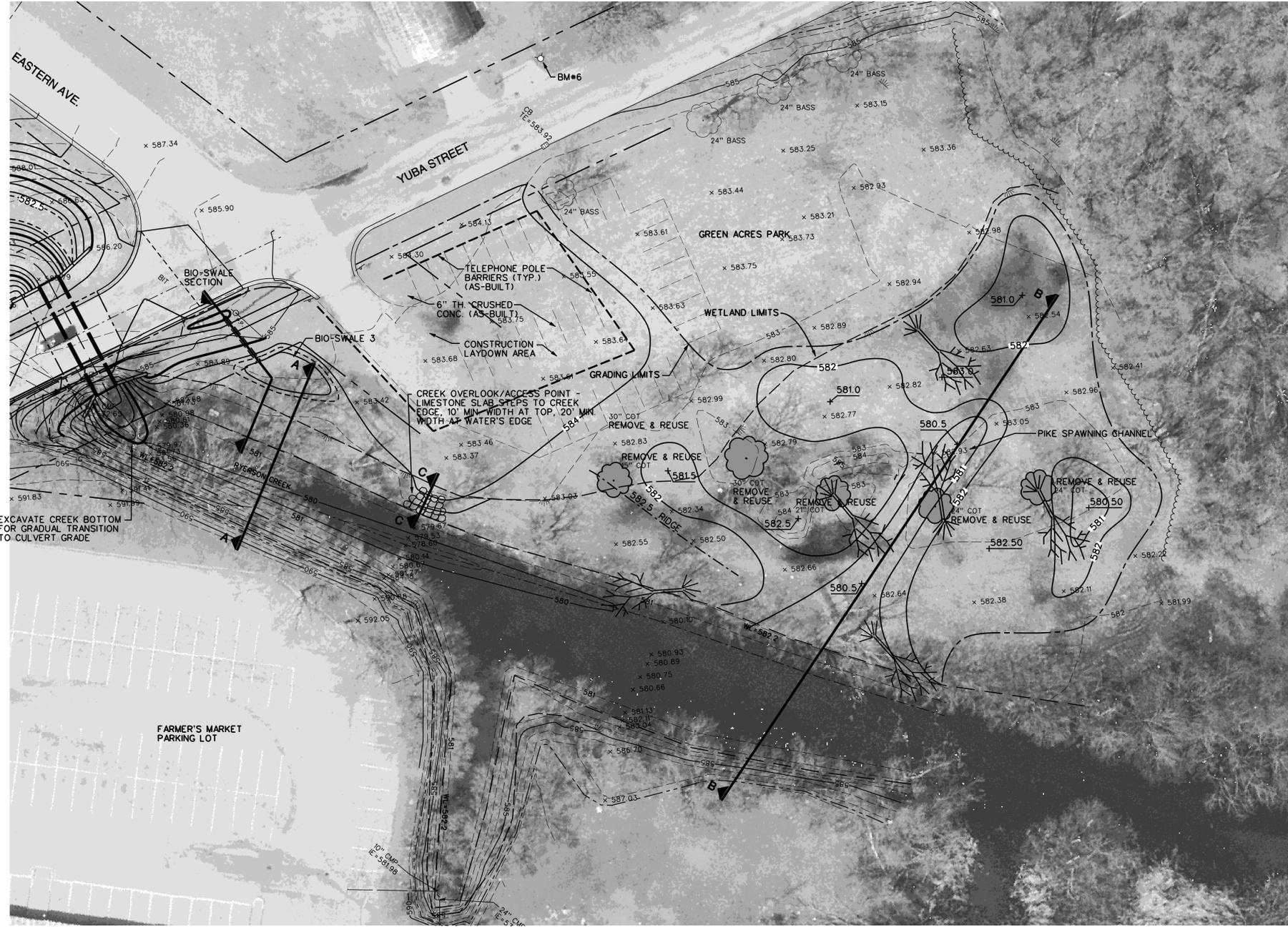


SECTION B-B
HORIZ. SCALE: 1" = 30'
VERT. SCALE: 1" = 10'

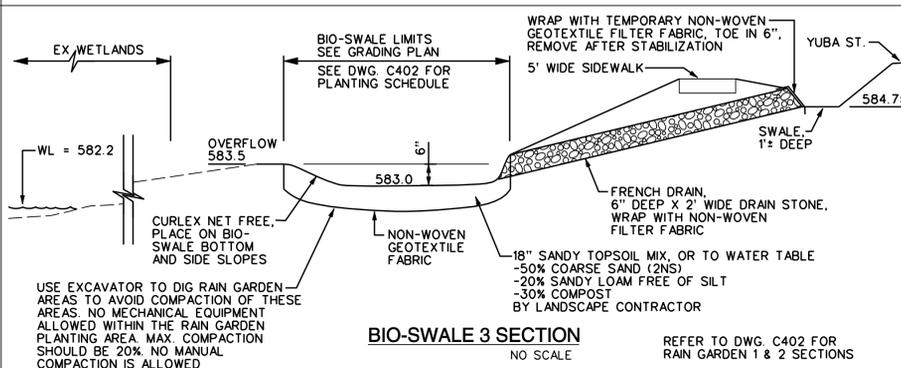


SECTION C-C THROUGH LIMESTONE STEPS INSTALLATION
NO SCALE

GRADING DETAIL
NO SCALE



INVASIVE/NUISANCE SPECIES REMOVAL
INVASIVE/NUISANCE PLANTS (WILLOW, BOX ELDER, PHRAGMITES, REED CANARY GRASS, AUTUMN OLIVE, PURPLE LOOSESTRIFE, HONEYSUCKLE, GARLIC MUSTARD AND BUCKTHORN, BITTERSWEET VINE) TO BE TREATED. WOODY PLANT MATERIAL TO BE CUT DOWN AT THE SOIL SURFACE LEAVING STUMP AND ROOT MASS INTACT. BRUSH ON HERBICIDE CONTAINING TRICLOPYR 3 TO CUT SURFACE OF STUMP TO ELIMINATE REGROWTH. WORK TO BE PERFORMED BY LICENSED APPLICATOR IN ACCORDANCE WITH REGULATORY STANDARDS AND MANUFACTURER'S DIRECTIONS. HERBACEOUS INVASIVE PLANTS TO BE TREATED BY WICKING HERBICIDE CONTAINING GLYPHOSATE ON LEAF SURFACES. WORK TO BE PERFORMED BY LICENSED APPLICATOR IN ACCORDANCE WITH REGULATORY GUIDELINES AND MANUFACTURER'S DIRECTIONS. NATIVE PLANTS TO BE REINTRODUCED IN THIS AREA. SEE PLANT LIST, DRAWING C101.

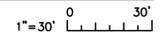


BIO-SWALE 3 SECTION
NO SCALE

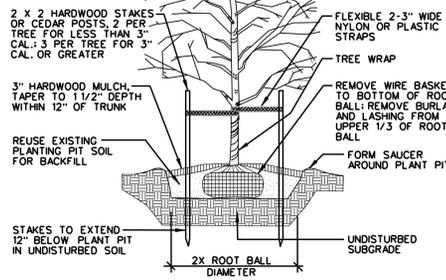
REFER TO DWG. C402 FOR RAIN GARDEN 1 & 2 SECTIONS

- GENERAL NOTES**
- ALL WORK SHALL COMPLY WITH MDEQ PERMIT AND ANY OTHER ISSUED PERMITS.
 - ASPHALT MILLINGS ALLOWABLE IN CONTRACTOR LAYDOWN AREA IF EQUIVALENT VOLUME OF SOIL IS FIRST STRIPPED TO RESULT IN NO NET FILLING IN THIS AREA. PLACE TO LIMITS OF FUTURE PARKING ONLY.
 - ALL SOILS TO BE REMOVED FROM SITE MUST BE PLACED IN A TYPE II SANITARY LANDFILL. TIPPING TICKETS REQUIRED. WET SOILS MUST BE TEMPORARILY STOCKPILED FOR Dewatering PRIOR TO TRANSPORTING TO A TYPE II SANITARY LANDFILL.
 - REFER TO DWG. C102 FOR SOIL EROSION / SEDIMENTATION CONTROL MEASURES.
 - WORK SHALL BE IN ACCORDANCE WITH MDEQ PERMIT.
- PROJECT GOALS**
- #1 - RESTORE 400 LF OF NATIVE PLANT BUFFER AND IN STREAM HABITAT
 - #2 - CREATE 6 - 1.0 ACRE OF WETLAND HABITAT (0.5 ACRE EMERGENT + .15 ACRE NATIVE BUFFER = 1.0 ACRE CREATED/ENHANCED)
- LEGEND**
- TREE TO BE REMOVED AND REUSED FOR WILDLIFE HABITAT (NOTED ON PLAN WHETHER TREE WILL BE REUSED OR DISPOSED OF)
 - EXISTING WETLAND LIMITS
 - LIMITS OF GRADING
 - HABITAT STRUCTURE - WHOLE TREE TO REMAIN INTACT WITH THE EXCEPTION THAT LIMBS ON THE GROUND SIDE OF THE TREE TO BE REMOVED (SO TREE WILL LAY FLATTER) AND INSTALLED HORIZONTALLY

RYERSON CREEK CORRIDOR & GREEN ACRES PARK WETLAND RESTORATION GRADING PLAN

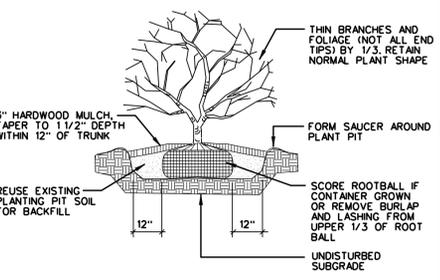


ALL PLANTS TO BE NURSERY GROWN STOCK IN SOIL SIMILAR TO SITE CONDITIONS



DECIDUOUS TREE PLANTING DETAIL
NO SCALE

ALL PLANTS TO BE NURSERY GROWN STOCK IN SOIL SIMILAR TO SITE CONDITIONS



SHRUB PLANTING DETAIL
NO SCALE

PLANT LIST (SHEET SPECIFIC)

QUANT.	ABBV.	BOTANICAL NAME	COMMON NAME	SIZE	COMMENTS
6	AR	ACER RUBRUM	RED MAPLE	1 1/2" CAL.	B & B
2	BN	BETULA NIGRA	RIVER BIRCH	1 1/2" CAL.	B & B
15	CO	CEPHALANTHUS OCCIDENTALIS	BUTTONBUSH	1 GAL.	CONT.
52	CS	CORNUS SERICEA	RED STEMMED DOGWOOD	1 GAL.	CONT.
14	IV	ILEX VERTICILLATA	MICHIGAN HOLLY	1 GAL.	CONT.
7	LL	LARIX LARICINA	TAMARACK	1 GAL.	CONT.
1	OB	QUERCUS BICOLOR	SWAMP WHITE OAK	1 1/2" CAL.	B & B
10	RP	ROSA PALUSTRIS	SWAMP ROSE	1 GAL.	CONT.
17	SD	SALIX DISCOLOR	PUSSY WILLOW	1 GAL.	CONT.
4	VL	VIBURNUM LENTAGO	NANNYBERRY	1 GAL.	CONT.

NOTE: CONTRACTOR TO PLANT 15 BUTTONBUSH AND 15 PUSSY WILLOWS PER ARCHITECT'S DIRECTION IN THE FIELD ON KNOLLS WITHIN ROUGHLY GRADED WETLAND AREAS (PLANTS INCLUDED IN PLANT LIST). SWAMP WHITE OAK TO BE PLANTED IN THE SPRING.

UPLAND LAWN RESTORATION SEEDING MIX:

EMERALD PARK TALL FESCUE BLEND SUPPLIED BY COMMERCE CORPORATION 1-616-541-3309 OR APPROVED EQUAL SEED AT RATE OF 10-15 LBS. PER 1,000 SQ.FT.

11,270 SQ. FT. THIS DWG.

EMERGENT WETLAND SEED MIX

BOTANICAL NAME	COMMON NAME	OZ./ACRE
PERMANENT GRASSES/SEDGES/RUSHES		
CAREX COMOSA	BRISTLY SEDGE	2.50
CAREX LACUSTRIS	COMMON LAKE SEDGE	0.25
CAREX LURIDA	BOTTLE BRUSH SEDGE	4.00
CAREX VULPINOIDEA	BROWN FOX SEDGE	6.00
ELEOCHARIS OVATA	BLUNT SPIKE RUSH	1.00
LEERSIA ORYZOIDES	RICE CUT GRASS	3.00
JUNCUS EFFUSUS	COMMON RUSH	1.00
SCIRPUS ACUTUS	HARD-STEMMED BULRUSH	2.50
SCIRPUS PUNGENS	CHAIRMAKER'S RUSH	4.00
SCIRPUS VALIDUS	GREAT BULRUSH	6.00
	TOTAL OZ./ACRE	30.25
TEMPORARY COVER		
AVENA SATIVA	COMMON OAT	360.00
LOLIUM MULTIFLORUM	ANNUAL RYE	100.00
	TOTAL OZ./ACRE	460.00
FORBS/SHRUBS		
ACORUS CALAMUS	SWEET FLAG	0.50
ALISMA SPP.	WATER PLANTAIN MIX	2.00
ASCLEPIAS INCARNATA	SWAMP MILKWEED	1.50
CEPHALANTHUS OCCIDENTALIS	BUTTONBUSH	0.50
DECONIUM VERTICILLATUS	SWAMP LOOSESTRIFE	0.50
EUPATORIUM MACULATUM	SPOTTED JOE-PYE WEED	0.50
HIBISCUS SPP.	ROSE MALLOW MIX	3.00
IRIS VIRGINICA	BLUE FLAG	6.00
LOBELIA CARDINALIS	CARDINAL FLOWER	0.25
LOBELIA SIPHILITICA	GREAT BLUE LOBELIA	1.50
LYCOPUS AMERICANUS	COMMON WATER HOREHOUND	0.25
MIMULUS RINGENS	MONKEY FLOWER	1.00
PELTANDRA VIRGINICA	ARROW ARUM	16.00
PENTHORUM SEDOIDES	DITCH STONECROP	0.50
POLYGONUM SPP.	SMARTWEED MIX	0.50
PONTEDERIA CORDATA	PICKEREL WEED	10.00
SAGITTARIA LATIFOLIA	COMMON ARROWHEAD	2.00
SPARGANIUM AMERICANUM	AMERICAN BUR REED	1.00
SPARGANIUM EURYCARPUM	COMMON BUR REED	4.00
VERBENA HASTATA	BLUE VERVAIN	1.00
	TOTAL OZ./ACRE	52.50

3,900 SQ. FT. THIS DWG.

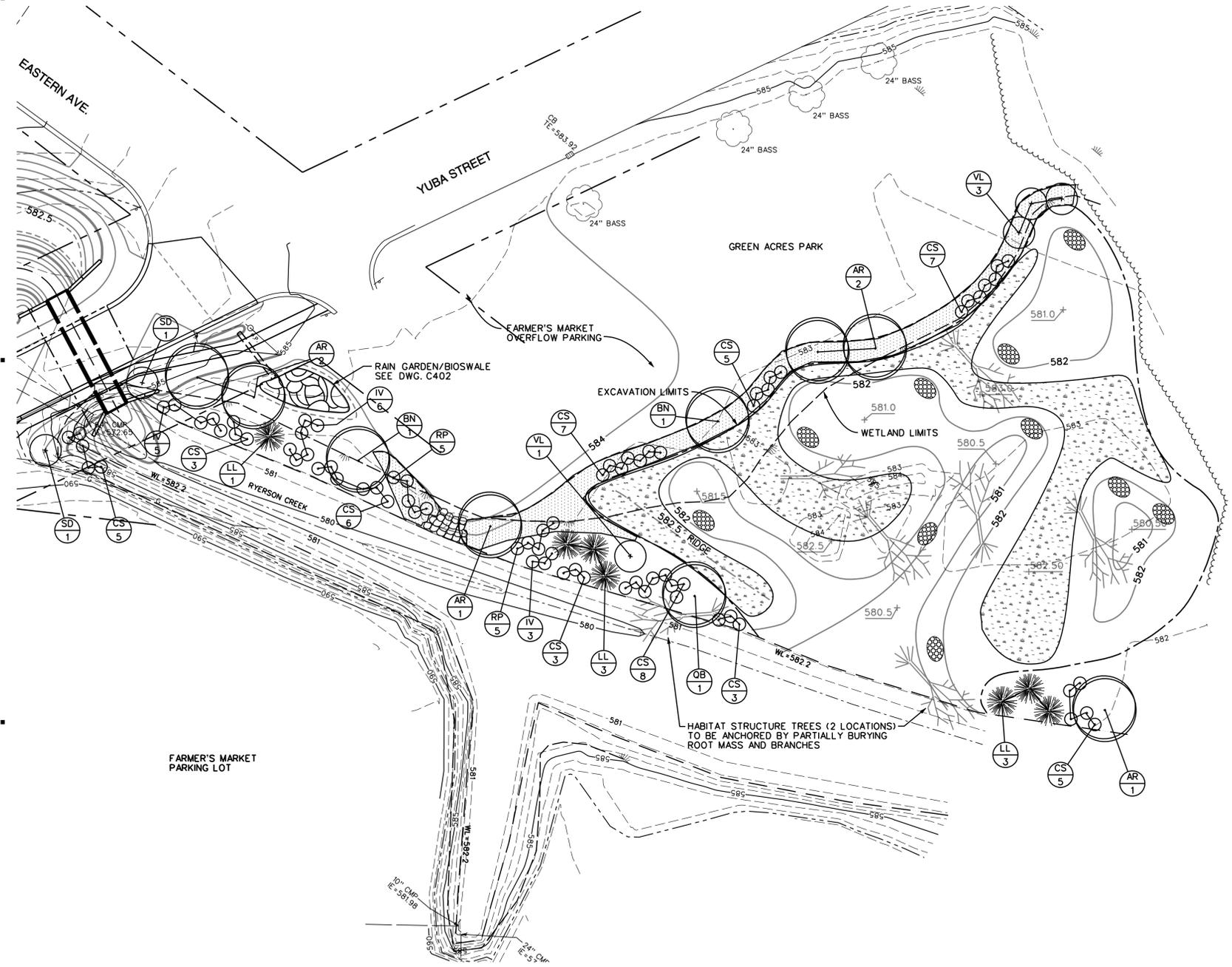
WETLAND EDGE SEED MIX

BOTANICAL NAME	COMMON NAME	OZ./ACRE
PERMANENT GRASSES/SEDGES/RUSHES		
CAREX COMOSA	BRISTLY SEDGE	1.00
CAREX CRISTATELLA	CRESTED OVAL SEDGE	2.00
CAREX FRANKII	BRISTLY CATTAIL SEDGE	6.00
CAREX VULPINOIDEA	BROWN FOX SEDGE	3.00
ELEOCHARIS PALUSTRIS	GREAT SPIKE RUSH	0.50
ELYMUS VIRGINICUS	VIRGINIA WILD RYE	1.00
GLYCERIA STRIATA	FOWL MANNA GRASS	1.00
LEERSIA ORYZOIDES	RICE CUT GRASS	1.50
SCIRPUS ATROVIRENS	DARK GREEN RUSH	1.00
SCIRPUS CYPERINUS	WOOL GRASS	0.75
SCIRPUS PUNGENS	CHAIRMAKER'S RUSH	1.00
SCIRPUS VALIDUS	GREAT BULRUSH	2.50
	TOTAL OZ./ACRE	32.25
TEMPORARY COVER		
AVENA SATIVA	COMMON OAT	360.00
LOLIUM MULTIFLORUM	ANNUAL RYE	100.00
	TOTAL OZ./ACRE	460.00
FORBS		
ACORUS CALAMUS	SWEET FLAG	0.50
ALISMA SPP.	WATER PLANTAIN MIX	2.00
ASCLEPIAS INCARNATA	SWAMP MILKWEED	1.00
ASTER PUNICEUS	BRISTLY ASTER	1.00
BIDENS SPP.	BIDENS MIX	2.00
EUPATORIUM PERFOLIATUM	COMMON BONESET	1.00
HELENIUM AUTUMNALE	SNEEZEWEED	2.00
IRIS VIRGINICA	BLUE FLAG	1.00
LOBELIA SIPHILITICA	GREAT BLUE LOBELIA	1.50
LYCOPUS AMERICANUS	COMMON WATER HOREHOUND	0.25
MIMULUS RINGENS	MONKEY FLOWER	1.50
PENTHORUM SEDOIDES	DITCH STONECROP	0.50
POLYGONUM SPP.	SMARTWEED MIX	0.50
RUBRICKIA HIRTA	BLACK-EYED SUSAN	5.00
RUBRICKIA LACINIATA	WILD GOLDEN GLOW	0.75
SAGITTARIA LATIFOLIA	COMMON ARROWHEAD	2.00
SENNA HEBCARPA	WILD SENNA	2.00
SPARGANIUM EURYCARPUM	COMMON BUR REED	4.00
THALICTRUM DASycARPUM	PURPLE MEADOW RUE	0.50
VERBENA HASTATA	BLUE VERVAIN	1.50
VERNONIA SPP.	IRONWEED MIX	2.00
	TOTAL OZ./ACRE	33.50

UPLAND RESTORATION SEED MIX

EMERALD PARK TALL FESCUE BLEND SUPPLIED BY COMMERCE CORPORATION 1-616-541-3309 OR APPROVED EQUAL SEED AT RATE OF 10-15 LBS. PER 1,000 SQ.FT.

NOTE: SEED MIX FOR ALL DISTURBED NON-WETLAND MIX AREAS.



RYERSON CREEK CORRIDOR & GREEN ACRES PARK WETLAND RESTORATION LANDSCAPE PLAN



1"=30'

EMERGENT WETLAND PLANT PLUG LIST

BOTANICAL NAME	COMMON NAME
ACORUS CALAMUS	SWEET FLAG
ALISMA SUBCORDATUM	COMMON WATER PLANTAIN
ASCLEPIAS INCARNATA	SWAMP MILKWEED
CEPHALANTHUS OCCIDENTALIS	BUTTONBUSH
ELEOCHARIS OVATA	BLUNT SPIKE RUSH
EUPATORIUM MACULATUM	SPOTTED JOE-PYE WEED
HIBISCUS MASCHETOS	SWAMP ROSE MALLOW
IRIS VIRGINICA	BLUE FLAG
LEERSIA ORYZOIDES	RICE CUT GRASS
LOBELIA CARDINALIS	CARDINAL FLOWER
MIMULUS RINGENS	MONKEY FLOWER
PELTANDRA VIRGINICA	ARROW ARUM
PONTEDERIA CORDATA	PICKEREL WEED
ROSA PALUSTRIS	SWAMP ROSE
SAGITTARIA LATIFOLIA	COMMON ARROWHEAD
SCIRPUS ACUTUS	HARD-STEMMED BULRUSH
SPARGANIUM EURYCARPUM	COMMON BUR REED
ZIZANIA AQUATICA	WILD RICE

LEGEND

- EXISTING WETLAND LIMITS
- HABITAT STRUCTURE - WHOLE TREE TO REMAIN INTACT WITH THE EXCEPTION THAT LIMBS ON THE GROUND SIDE OF THE TREE TO BE REMOVED (SO TREE WILL LAY FLATTER) AND INSTALLED HORIZONTALLY

GENERAL NOTES:

- ALL WORK SHALL COMPLY WITH MDEQ PERMIT AND ANY OTHER ISSUED PERMITS.
- SHRUB AND TREE SAUCERS TO RECEIVE 3" SHREDDED HARDWOOD MULCH.
- ALL AREAS DISTURBED BY CONSTRUCTION TO RECEIVE 6" OF TOPSOIL AND SEEDED WITH UPLAND RESTORATION SEED MIX UNLESS SHOWN OTHERWISE ON PLANS.
- CONTRACTOR MAY BE REQUIRED TO DO MINOR CLEARING TO PLANT IN NATURAL UNDISTURBED AREAS.
- CONTRACTOR RESPONSIBLE FOR WATERING PLANTS AND SEED AREAS TO MAINTAIN IN HEALTHY CONDITION.

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1811 4 Mile Rd N.E., Grand Rapids, MI 49525
616 361 2664 OFFICE 616 361 1493 FAX
www.progressiveae.com

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CHECKED BY: MJO
PROJECT LDR: JPM
MJO

MUSKOGEE LAKE A.O.C. HABITAT RESTORATION AT RYERSON CREEK

WEST MICHIGAN SHORELINE REGIONAL DEVELOPMENT COMMISSION
MUSKOGEE, MICHIGAN

AS-BUILT: 11/14/12
BIDS & CONSTRUCTION: 5/16/11
OWNER REVIEW: 4/21/11
MDEQ REVIEW: 3/10/11
OWNER REVIEW: 7/14/11

RYERSON CREEK CORRIDOR & GREEN ACRES PARK
WETLAND RESTORATION
LANDSCAPE PLAN

FILE NO: 70080001

C101

S-E-S-C KEYING SYSTEM

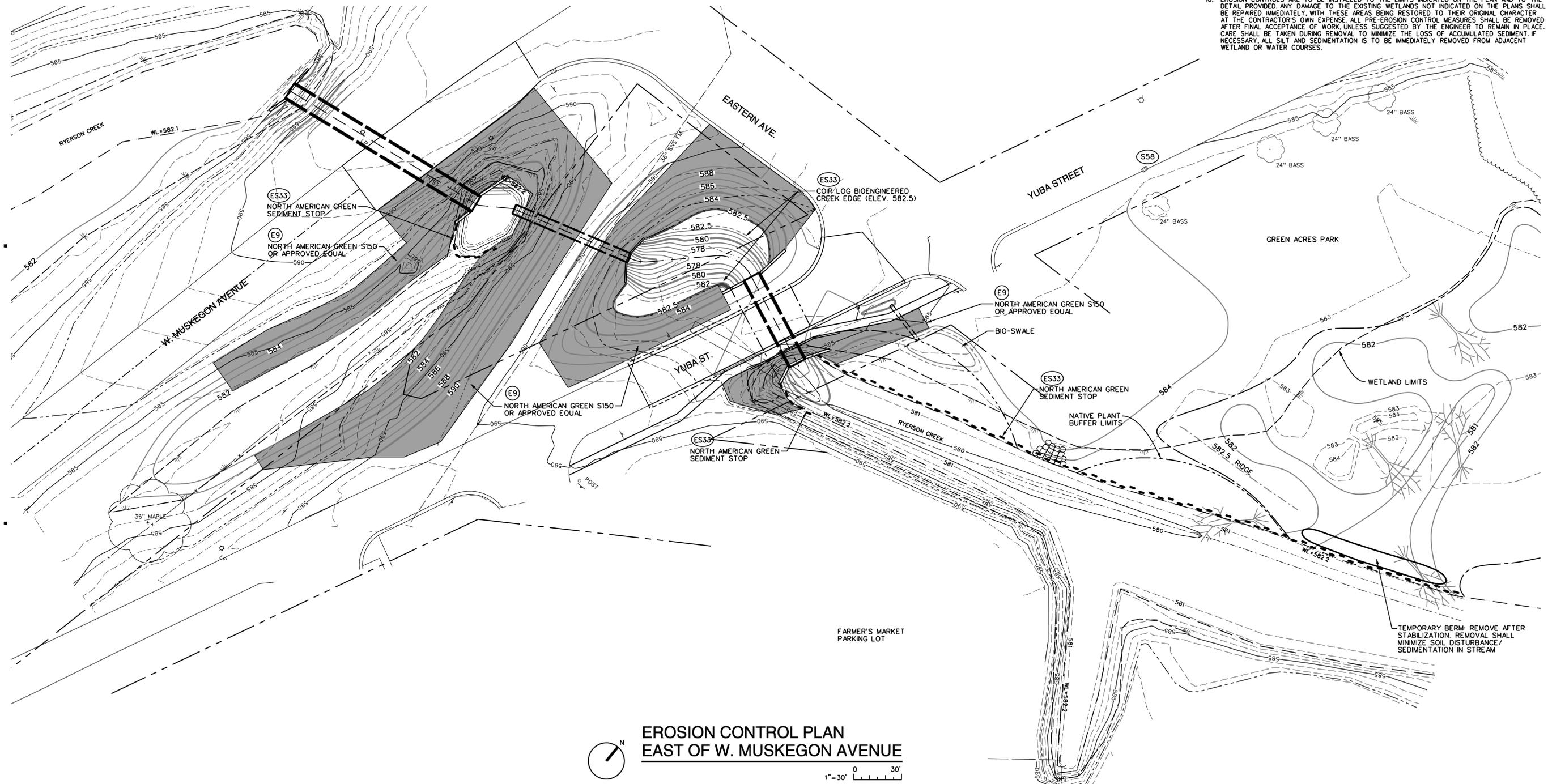
KEY	BEST MANAGEMENT PRACTICES	SYMBOL	WHERE USED
EROSION CONTROLS			
E8	PERMANENT SEEDING		Stabilization method utilized on sites where earth change has been completed (final grading attained).
E9	MULCH BLANKETS		NORTH AMERICAN GREEN S150 OR APPROVED EQUAL.
ES33	FILTER ROLLS		NORTH AMERICAN GREEN SEDIMENT STOP - INSTALL PER MANUFACTURER'S RECOMMENDATION
S58	INLET PROTECTION FABRIC DROP		Use at stormwater inlets, especially at construction sites.

CONSTRUCTION SCHEDULE & SEQUENCE	JUNE '11	JULY	AUG.	SEPT.	OCT.
INSTALL AND MAINTAIN TEMPORARY EROSION CONTROLS	→				
TOPSOIL STRIPPING & STOCKPILING		→			
ON-SITE UTILITIES			→		
SITE GRADING & EARTHWORK				→	
TOPSOIL SPREADING					→
PERMANENT SEEDING					→
ROADWAY PAVING					→

THIS CONSTRUCTION SCHEDULE IS PROVIDED TO INDICATE ANTICIPATED START DATES FOR SITE DISTURBANCE AND ANTICIPATED COMPLETION DATES FOR SITE STABILIZATION AS REQUIRED BY MUSKEGON COUNTY FOR SOIL EROSION AND SEDIMENTATION CONTROL. EXACT START AND COMPLETION DATES FOR EACH ACTIVITY SHOULD BE COORDINATED WITH THE CONSTRUCTION MANAGER.

EROSION CONTROL NOTES:

- INSTALL EROSION CONTROL MEASURES AT THE LIMITS OF EARTHWORK PRIOR TO THE START OF ANY EARTHWORK OPERATIONS. ALL OTHER EROSION CONTROL MEASURES SHALL BE INSTALLED IN CONJUNCTION WITH THE CONSTRUCTION SCHEDULE AND SEQUENCE AND SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.
- MAINTAIN ALL EROSION CONTROL INSTALLATIONS DURING THE COURSE OF CONSTRUCTION. MAKE INSPECTIONS AFTER EACH STORM EVENT AND REPAIR OR REPLACE ANY DAMAGE. REMOVE ACCUMULATED SEDIMENT FROM SEDIMENT BASINS TO MAINTAIN EFFECTIVENESS OF EROSION CONTROL INSTALLATIONS. REPAIR ANY ERODED AREAS ON SLOPES OR NEAR SILT FENCE. REGRADE AND RESEED ANY TEMPORARY SEEDED AREAS AS NECESSARY TO PREVENT EROSION.
- THE EROSION CONTROL MEASURES INDICATED ON THIS PLAN ARE BASED ON "THE MICHIGAN SOIL EROSION & SEDIMENTATION CONTROL GUIDEBOOK". THE SOIL EROSION AND SEDIMENTATION CONTROLS SHALL BE INSTALLED AND MAINTAINED PER PLANS AND SPECIFICATIONS.
- KEEP PUBLIC ROADWAYS CLEAR OF ACCUMULATED SEDIMENT. SEDIMENTS SHALL BE REMOVED IMMEDIATELY UPON ENTERING PUBLIC ROADWAYS AND SHALL BE RETURNED TO THE LIKELY POINT OF ORIGIN. SEDIMENTS SHALL NOT BE FLUSHED OR WASHED FROM THE AREA WITH WATER.
- SILTSACK MANUFACTURED BY PRICE AND COMPANY OR DANDY BAG MANUFACTURED BY SITE SUPPLY INC. OR APPROVED EQUAL SHALL BE USED FOR STORM INLET PROTECTION ITEM S58 (SEE SESC KEYING SYSTEM LEGEND).
- CONTRACTOR SHALL INSTALL AND MAINTAIN SILT FENCE AROUND ALL SUBSOIL SPOIL AND TOPSOIL STOCKPILE AREAS. ALL SOIL PILES SHALL BE SEEDED WITH APPROVED SEED MIXTURES AND BE LOCATED AWAY FROM ANY DOWNSLOPE STREET, DRIVEWAY, DITCH OR DRAINAGE WAY
- REMOVE TEMPORARY CONTROL MEASURES AS FOLLOWS:
PAVEMENT AREAS - MAINTAIN IN SERVICE UNTIL PREPARATION FOR PLACEMENT OF BITUMINOUS LEVELING COURSES
LAWN AREAS - REMOVE AFTER LAWN IS WELL ESTABLISHED AND ROOTED
- SILT FENCE SHALL BE INSPECTED AND REPAIRED ONCE A WEEK AND AFTER EVERY RAIN. SEDIMENT SHALL BE REMOVED IF DEPOSITS REACH HALF THE FENCE HEIGHT.
- CONTRACTOR WILL BE RESPONSIBLE FOR ALL TEMPORARY SOIL EROSION. OWNER WILL BE RESPONSIBLE FOR PERMANENT SOIL EROSION CONTROL.
- EROSION CONTROLS ARE TO BE INSTALLED TO THE LIMITS INDICATED ON THE PLAN AND TO THE DETAIL PROVIDED. ANY DAMAGE TO THE EXISTING WETLANDS NOT INDICATED ON THE PLANS SHALL BE REPAIRED IMMEDIATELY, WITH THESE AREAS BEING RESTORED TO THEIR ORIGINAL CHARACTER AT THE CONTRACTOR'S OWN EXPENSE. ALL PRE-EROSION CONTROL MEASURES SHALL BE REMOVED AFTER FINAL ACCEPTANCE OF WORK, UNLESS SUGGESTED BY THE ENGINEER TO REMAIN IN PLACE. CARE SHALL BE TAKEN DURING REMOVAL TO MINIMIZE THE LOSS OF ACCUMULATED SEDIMENT. IF NECESSARY, ALL SILT AND SEDIMENTATION IS TO BE IMMEDIATELY REMOVED FROM ADJACENT WETLAND OR WATER COURSES.



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MUSKEGON LAKE A.O.C. HABITAT RESTORATION AT RYERSON CREEK

WEST MICHIGAN SHORELINE REGIONAL DEVELOPMENT COMMISSION

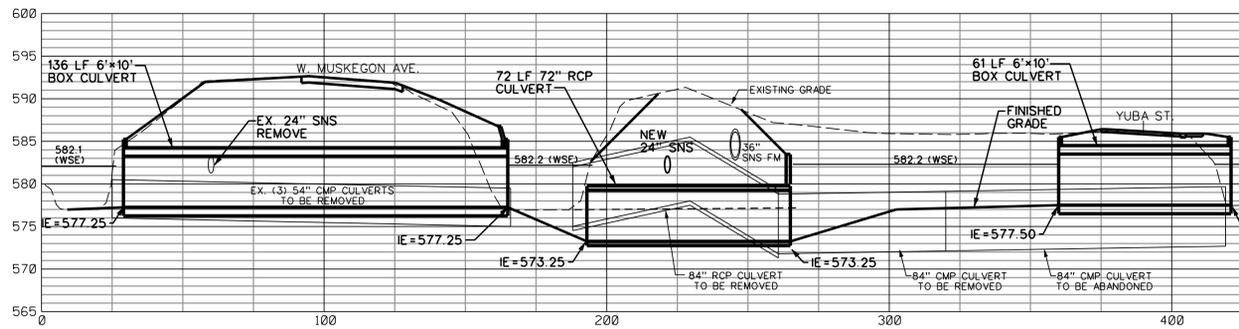
AS-BUILT ■ BIDS & CONSTRUCTION ■

EROSION CONTROL PLAN ■ EAST OF W. MUSKEGON AVE. ■ 11/14/12 ■ 5/16/11

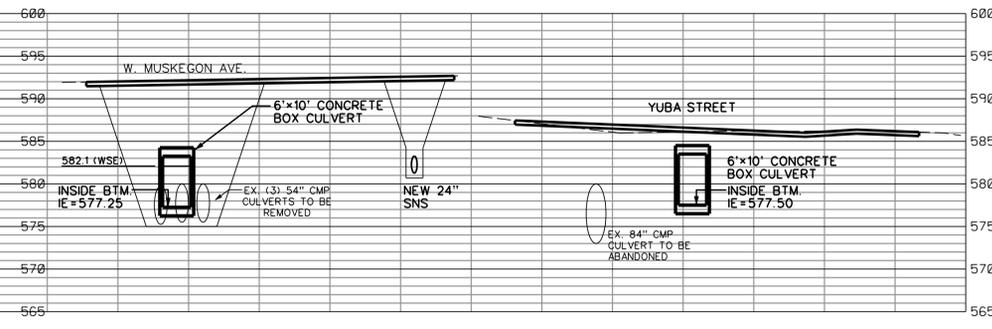
C102

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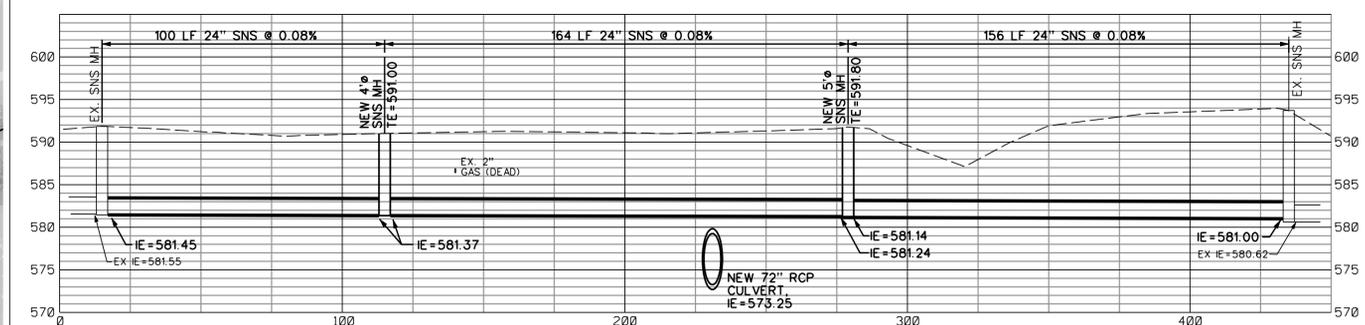


SECTION D-D
 HORIZ. SCALE: 1" = 30'
 VERT. SCALE: 1" = 10'

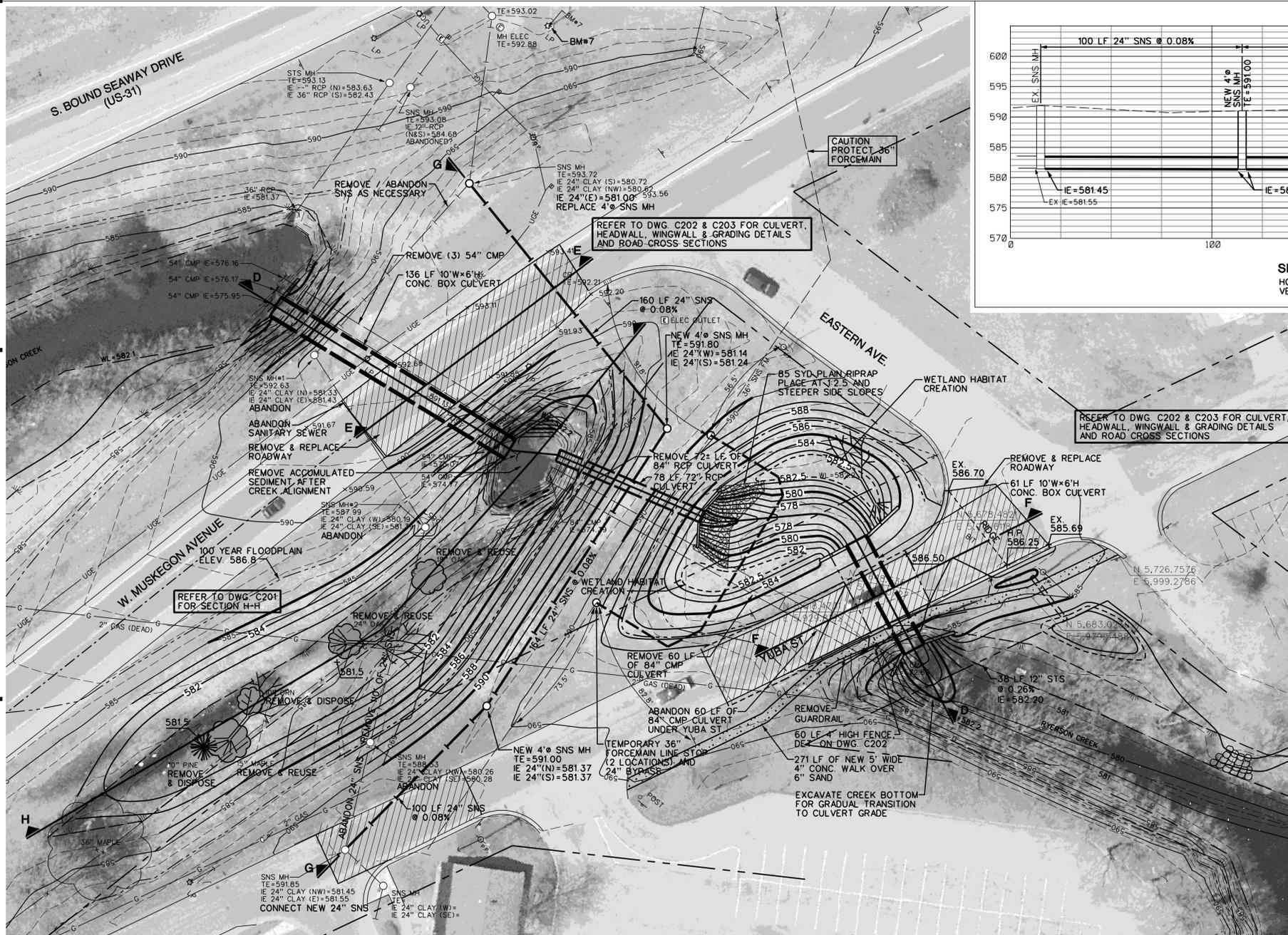


SECTION E-E
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 VERT. SCALE: 1" = 10'

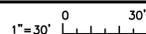
SECTION F-F
 HORIZ. SCALE: 1" = 30'
 VERT. SCALE: 1" = 10'



SECTION G-G, GRAVITY SANITARY SEWER PROFILE
 HORIZ. SCALE: 1" = 30'
 VERT. SCALE: 1" = 10'

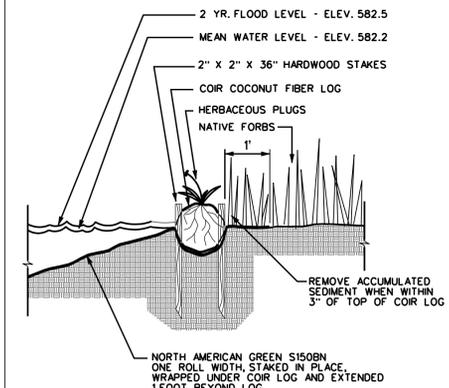


YUBA STREET & W. MUSKEGON AVE. CULVERT REPLACEMENTS & WETLAND RESTORATION GRADING & UTILITY PLAN



GENERAL NOTES

1. REMOVE 36" DIAMETER SANITARY SEWER FORCEMAIN (OWNED BY MUSKEGON COUNTY) DURING CULVERT REPLACEMENT. LINE STOP SANITARY SEWER FLOW AND DIVERT IN A 24" DIAMETER HOPE PIPE BYPASS. THRUST BLOCKING REQUIRED FOR LINE STOPS. REPLACE REMOVED SECTIONS WITH NEW P.C.C.P. PIPE WITH ONE REPAIR COUPLING. PROVIDE DETAILED BYPASS PLAN FOR REVIEW AND APPROVAL BY OWNER AND MUSKEGON COUNTY.
2. TEMPORARY BYPASS PUMPING REQUIRED FOR CONSTRUCTION OF NEW 24" DIAMETER GRAVITY SANITARY SEWER. PROVIDE DETAILED BYPASS PLAN FOR REVIEW AND APPROVAL BY OWNER AND CITY OF MUSKEGON.
3. PROVIDE DEWATERING PLAN FOR EACH CULVERT SECTION FOR ENGINEER'S APPROVAL AND COUNTY SOIL EROSION AGENT'S APPROVAL PRIOR TO EXECUTION. DEWATERING INTO THE CREEK SHALL DISCHARGE THROUGH A SEDIMENT BAG OR VISQUEEN BOTTOM FOR PROTECTION FROM EROSION VELOCITY.
4. ABANDON IN-PLACE 84" DIAMETER CMP CULVERT UNDER YUBA STREET WITH LOW DENSITY FLOWABLE FILL WITH FORMING AGENT. WEIGHT LESS THAN 70 PCF.
5. ROAD CLOSURE: FOLLOW REQUIREMENTS SHOWN ON SHEET C700. NO MORE THAN ONE ROAD CLOSURE ALLOWED AT A TIME. DURATIONS AS LISTED ON DWG. C700.
6. ALL SOILS TO BE REMOVED FROM SITE MUST BE PLACED IN A TYPE II SANITARY LANDFILL. TIPPING TICKETS REQUIRED. WET SOILS MUST BE TEMPORARILY STOCKPILED FOR DEWATERING PRIOR TO TRANSPORTING TO A TYPE II SANITARY LANDFILL.
7. REFER TO DWG. C102 FOR SOIL EROSION / SEDIMENTATION CONTROL MEASURES.
8. ALL WORK SHALL COMPLY WITH MDEQ PERMIT AND ANY OTHER ISSUED PERMITS.



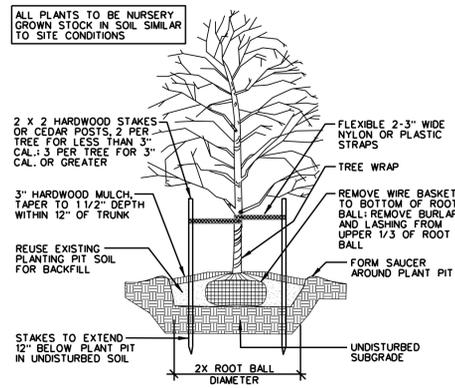
COIR LOG INSTALLATION DETAIL
 NO SCALE

LEGEND

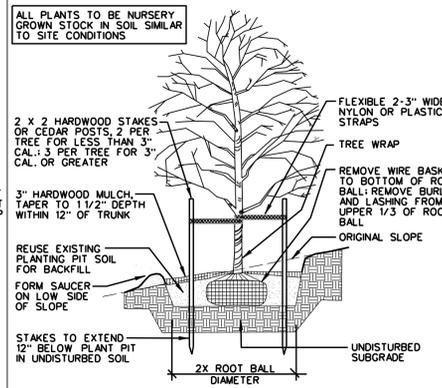
- TREE TO BE REMOVED AND REUSED FOR WILDLIFE HABITAT
- EXISTING WETLAND LIMITS
- LIMITS OF GRADING
- COIR LOG BIOENGINEERED CREEK EDGE PROTECTION
- HABITAT STRUCTURE - WHOLE TREE TO REMAIN INTACT WITH THE EXCEPTION THAT LIMBS ON THE GROUND SIDE OF THE TREE TO BE REMOVED (SO TREE WILL LAY FLATTER) AND INSTALLED HORIZONTALLY

PROJECT GOALS:

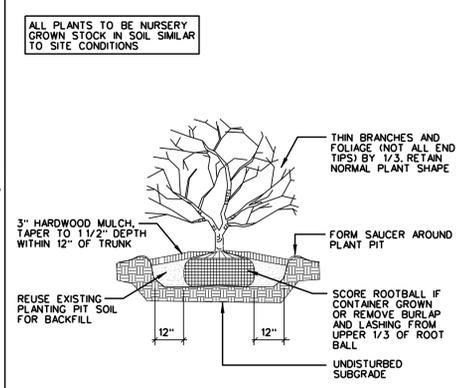
- #3 - REPLACE YUBA STREET CULVERT WITH BOX CULVERT
- #4 - DAYLIGHT RYERSON CREEK BETWEEN YUBA STREET AND W. MUSKEGON AVENUE WITH BIOENGINEERED CREEK EDGES
- #5 - RESTORE 25 ACRE WETLANDS BETWEEN YUBA AND W. MUSKEGON AVENUE (.33 ACRES CREATED/ENHANCED)
- #6 - REPLACE 3 FAILING TUBE CULVERTS UNDER W. MUSKEGON AVENUE



DECIDUOUS TREE PLANTING DETAIL
NO SCALE



DECIDUOUS TREE ON SLOPE PLANTING DETAIL
NO SCALE



SHRUB PLANTING DETAIL
NO SCALE

EMERGENT WETLAND PLANT PLUG LIST

BOTANICAL NAME	COMMON NAME
ACORUS CALAMUS	SWEET FLAG
ALISMA SUBCORDATUM	COMMON WATER PLANTAIN
ASCLEPIAS INCARNATA	SWAMP MILKWEED
CEPHALANTHUS OCCIDENTALIS	BUTTONBUSH
ELEOCHARIS OVATA	BLUNT SPIKE RUSH
EUPATORIUM MACULATUM	SPOTTED JOE-PYE WEED
HIBISCUS MASCHOUTOS	SWAMP ROSE MALLOW
IRIS VIRGINICA	BLUE FLAG
LEERSIA ORYZOIDES	RICE CUT GRASS
LOBELIA CARDINALIS	CARDINAL FLOWER
MIMULUS RINGENS	MONKEY FLOWER
PELTANDRA VIRGINICA	ARROW ARUM
PONTEDERIA CORDATA	PICKEREL WEED
ROSALUSTRIS	SWAMP ROSE
SAGITTARIA LATIFOLIA	COMMON ARROWHEAD
SCIRPUS ACUTUS	HARD-STEMMED BULRUSH
SPARGANIUM EURYCARPUM	COMMON BUR REED
ZIZANIA AQUATICA	WILD RICE

EMERGENT WETLAND SEED MIX

BOTANICAL NAME	COMMON NAME	OZ./ACRE
PERMANENT GRASSES/SEDGES/RUSHES		
CAREX COMOSA	BRISTLY SEDGE	2.50
CAREX LASIOCHRIS	COMMON LAKE SEDGE	0.25
CAREX LURIDA	BOTTLE BRUSH SEDGE	4.00
CAREX VULPINOIDEA	BROWN FOX SEDGE	6.00
ELEOCHARIS OVATA	BLUNT SPIKE RUSH	1.00
LEERSIA ORYZOIDES	RICE CUT GRASS	3.00
JUNCUS EFFUSUS	COMMON RUSH	1.00
SCIRPUS ACUTUS	HARD-STEMMED BULRUSH	2.50
SCIRPUS PUNGENS	CHAIRMAKER'S RUSH	4.00
SCIRPUS VALIDUS	GREAT BULRUSH	6.00
TOTAL OZ./ACRE		30.25
TEMPORARY COVER		
AVENA SATIVA	COMMON OAT	360.00
LOLIUM MULTIFLORUM	ANNUAL RYE	100.00
TOTAL OZ./ACRE		460.00
FORBS/SHRUBS		
ACORUS CALAMUS	SWEET FLAG	0.50
ALISMA SPP.	WATER PLANTAIN MIX	2.00
ASCLEPIAS INCARNATA	SWAMP MILKWEED	1.50
ASCLEPIAS INCARNATA	BUTTONBUSH	0.50
CEPHALANTHUS OCCIDENTALIS	SWAMP LOOSESTRIPE	0.50
DECONDRON VERTICILLATUS	SPOTTED JOE-PYE WEED	0.50
EUPATORIUM MACULATUM	ROSE MALLOW MIX	3.00
HIBISCUS SPP.	BLUE FLAG	6.00
IRIS VIRGINICA	CARDINAL FLOWER	0.25
LOBELIA CARDINALIS	GREAT BLUE LOBELIA	1.50
LOBELIA SIPHILITICA	COMMON WATER HOREHOUND	0.25
LYCOPUS AMERICANUS	MONKEY FLOWER	1.00
MIMULUS RINGENS	ARROW ARUM	16.00
PELTANDRA VIRGINICA	DITCH STONECROP	0.50
PENTHORUM SEDOIDES	SMARTWEED MIX	0.50
POLYGONUM SPP.	PICKEREL WEED	10.00
PONTEDERIA CORDATA	COMMON ARROWHEAD	2.00
SAGITTARIA LATIFOLIA	AMERICAN BUR REED	1.00
SPARGANIUM AMERICANUM	COMMON BUR REED	4.00
SPARGANIUM EURYCARPUM	BLUE VERVAIN	1.00
VERBENA HASTATA	TOTAL OZ./ACRE	52.50

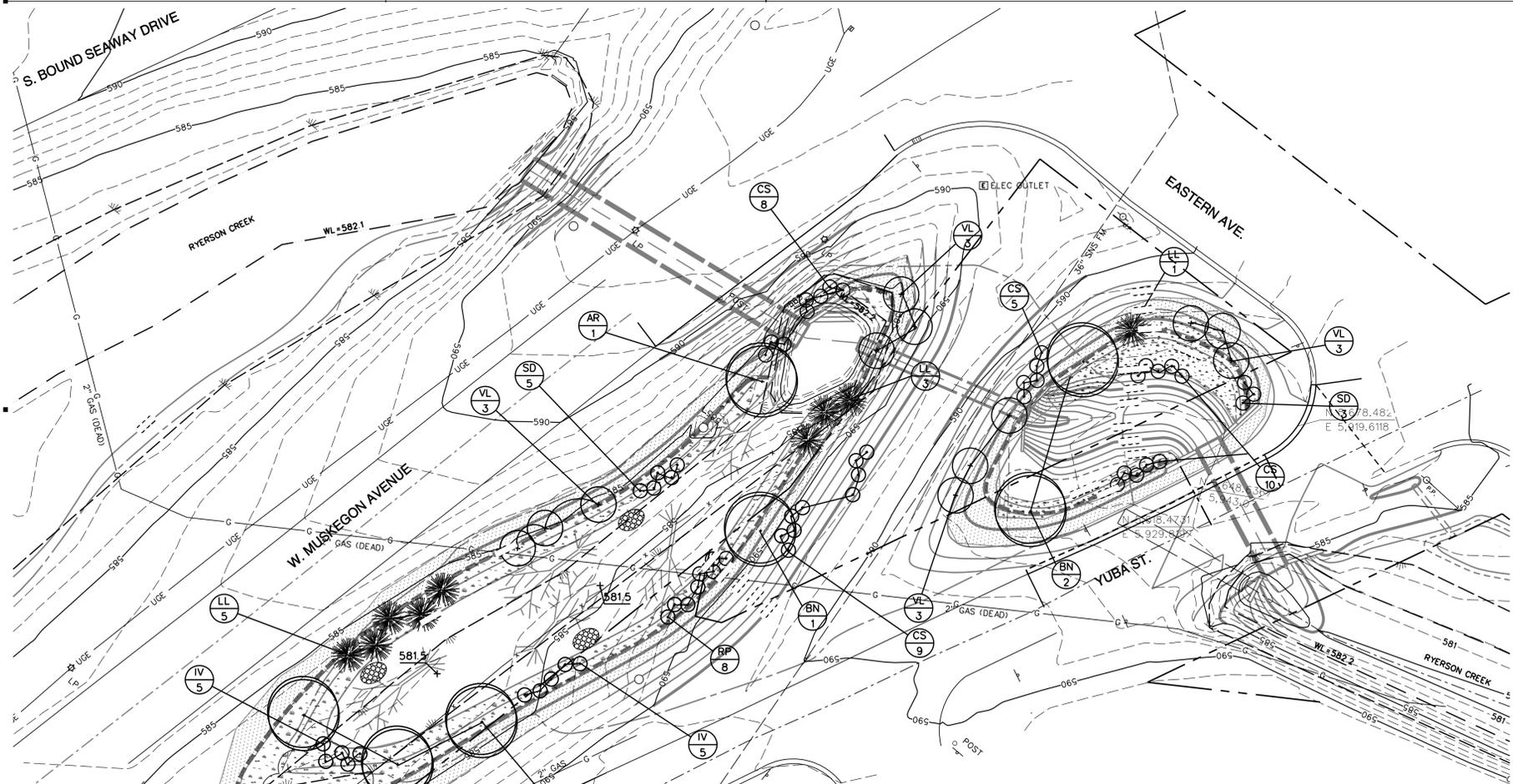
WETLAND EDGE SEED MIX

BOTANICAL NAME	COMMON NAME	OZ./ACRE
PERMANENT GRASSES/SEDGES/RUSHES		
CAREX COMOSA	BRISTLY SEDGE	1.00
CAREX CRISTATELLA	CRESTED OVAL SEDGE	2.00
CAREX FRANKII	BRISTLY CATTAIL SEDGE	6.00
CAREX VULPINOIDEA	BROWN FOX SEDGE	3.00
ELEOCHARIS PALUSTRIS	GREAT SPIKE RUSH	0.50
ELYMUS VIRGINICUS	VIRGINIA WILD RYE	12.00
GLYCERIA STRIATA	FOWL MANNA GRASS	1.00
LEERSIA ORYZOIDES	RICE CUT GRASS	1.50
SCIRPUS ATROVIRENS	DARK GREEN RUSH	1.00
SCIRPUS CYPERINUS	WOOL GRASS	0.75
SCIRPUS PUNGENS	CHAIRMAKER'S RUSH	1.00
SCIRPUS VALIDUS	GREAT BULRUSH	2.50
TOTAL OZ./ACRE		32.25
TEMPORARY COVER		
AVENA SATIVA	COMMON OAT	360.00
LOLIUM MULTIFLORUM	ANNUAL RYE	100.00
TOTAL OZ./ACRE		460.00
FORBS		
ACORUS CALAMUS	SWEET FLAG	0.50
ALISMA SPP.	WATER PLANTAIN MIX	2.00
ASCLEPIAS INCARNATA	SWAMP MILKWEED	1.00
ASCLEPIAS INCARNATA	BRISTLY ASTER	1.00
ASTER PUNICEUS	COMMON MIX	2.00
BIDENS SPP.	COMMON BONESET	1.00
EUPATORIUM PERFOLIATUM	SNEEZEWEED	2.00
HELENIUM AUTUMNALE	BLUE FLAG	2.50
IRIS VIRGINICA	GREAT BLUE LOBELIA	1.00
LOBELIA SIPHILITICA	COMMON WATER HOREHOUND	0.25
LYCOPUS AMERICANUS	MONKEY FLOWER	1.50
MIMULUS RINGENS	DITCH STONECROP	0.50
PENTHORUM SEDOIDES	SMARTWEED MIX	0.50
POLYGONUM SPP.	WILD GOLDEN GLOW	5.00
RUBICEKIA HIRTA	COMMON ARROWHEAD	2.00
RUBICEKIA LACINIATA	WILD SENNA	2.00
SAGITTARIA LATIFOLIA	COMMON BUR REED	4.00
SENNA HEBECARPA	PURPLE MEADOW RUE	0.50
SPARGANIUM EURYCARPUM	COMMON BUR REED	4.00
THALICTRUM DASycARPUM	IRONWEED MIX	1.50
VERBENA HASTATA	TOTAL OZ./ACRE	33.50
VERNONIA SPP.		

UPLAND LAWN RESTORATION SEED MIX

EMERALD PARK TALL FESCUE BLEND
SUPPLIED BY COMMERCE CORPORATION
1-616-541-3309 OR APPROVED EQUAL
SEED AT RATE OF 10-15 LBS. PER 1,000 SQ.FT.

NOTE: SEED MIX FOR ALL DISTURBED NON-WETLAND MIX AREAS.
SEE GRADING LIMITS.



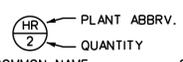
**YUBA STREET AND W. MUSKEGON AVENUE
CULVERT REPLACEMENT & WETLAND
RESTORATION LANDSCAPE PLAN**



1" = 30'

PLANT LIST (SHEET SPECIFIC)

QUANT.	ABBRV.	BOTANICAL NAME	COMMON NAME	SIZE	COMMENTS
4	AR	ACER RUBRUM	RED MAPLE	1 1/2" CAL.	B & B
3	BN	BETULA NIGRA	RIVER BIRCH	1 1/2" CAL.	B & B
32	CS	CORNUS SERICEA	RED STEMMED DOGWOOD	1 GAL.	CONT.
10	IV	ILEX VERTICILLATA	MICHIGAN HOLLY	1 GAL.	CONT.
9	LL	LARIX LARICINA	TAMARACK	1 GAL.	CONT.
8	RP	ROSA PALUSTRIS	SWAMP ROSE	1 GAL.	CONT.
8	SD	SALIX DISCOLOR	PUSSY WILLOW	1 GAL.	CONT.
12	VL	VIBURNUM LENTAGO	NANNYBERRY	1 GAL.	CONT.



GENERAL NOTES:

- SHRUBS AND TREE SAUCERS TO RECEIVE 3" SHREDDED HARDWOOD MULCH.
- ALL AREAS DISTURBED BY CONSTRUCTION TO RECEIVE 6" OF TOPSOIL AND SEEDED UNLESS SHOWN OTHERWISE ON PLANS.
- CONTRACTOR MAY BE REQUIRED TO DO MINOR CLEARING TO PLANT IN NATURAL UNDISTURBED AREAS.
- ALL WORK SHALL COMPLY WITH MDEQ PERMIT AND ANY OTHER ISSUED PERMITS.
- CONTRACTOR RESPONSIBLE FOR WATERING PLANTS AND SEED AREAS TO MAINTAIN IN HEALTHY CONDITION.

LEGEND

- TREE TO BE REMOVED AND REUSED FOR WILDLIFE HABITAT
- EXISTING WETLAND LIMITS
- COIR LOG BIOENGINEERED CREEK EDGE PROTECTION
- HABITAT STRUCTURE - WHOLE TREE TO REMAIN INTACT WITH THE EXCEPTION THAT LIMBS ON THE GROUND SIDE OF THE TREE TO BE REMOVED (SO TREE WILL LAY FLATTER) AND INSTALLED HORIZONTALLY

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DCM ■ MJO ■ JPN ■ MJO ■

DRAWN BY ■ CHECKED BY ■ PROJECT LDR ■

MUSKEGON LAKE A.O.C. HABITAT RESTORATION AT RYERSON CREEK

WEST MICHIGAN SHORELINE REGIONAL DEVELOPMENT COMMISSION
MUSKEGON, MICHIGAN

AS-BUILT ■

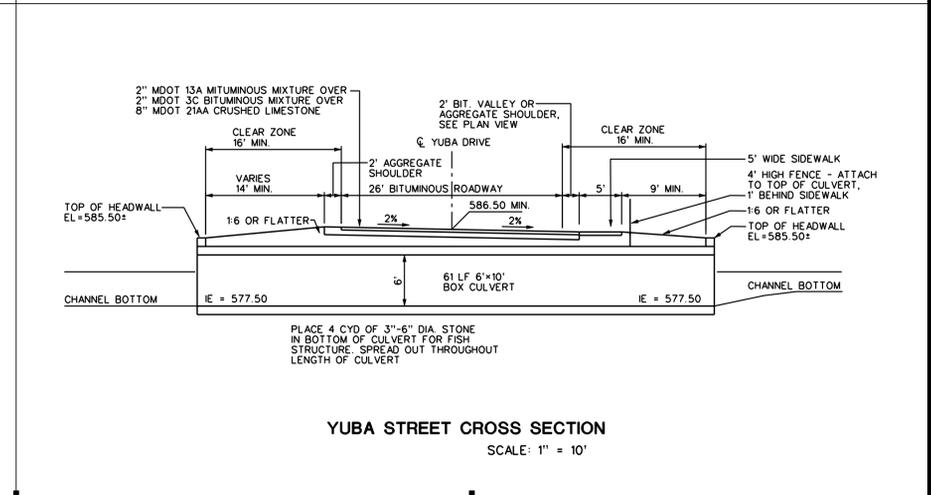
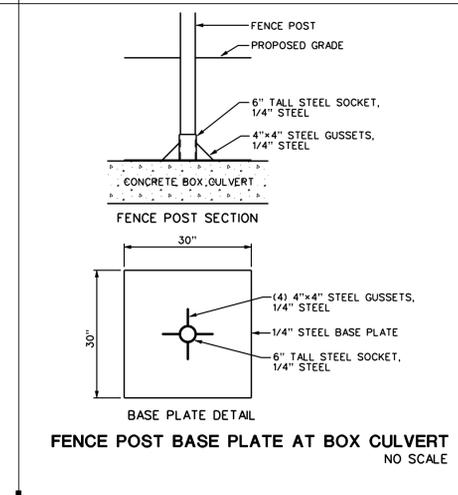
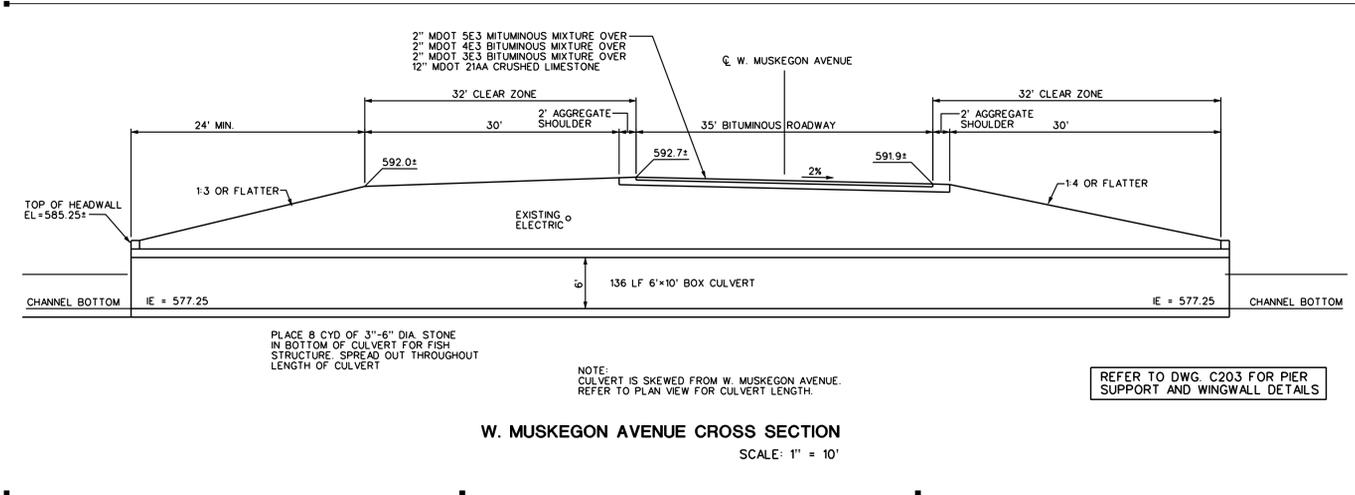
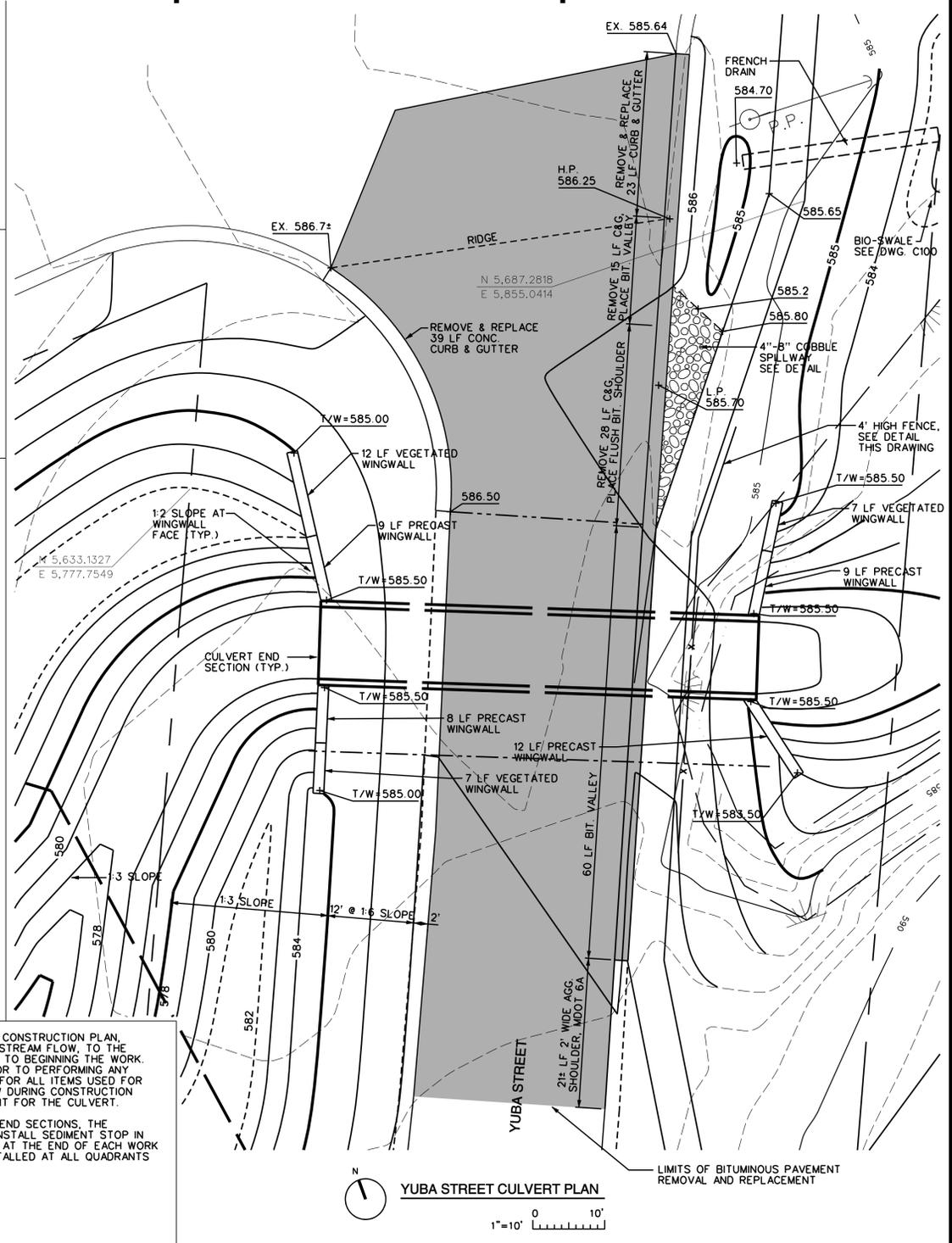
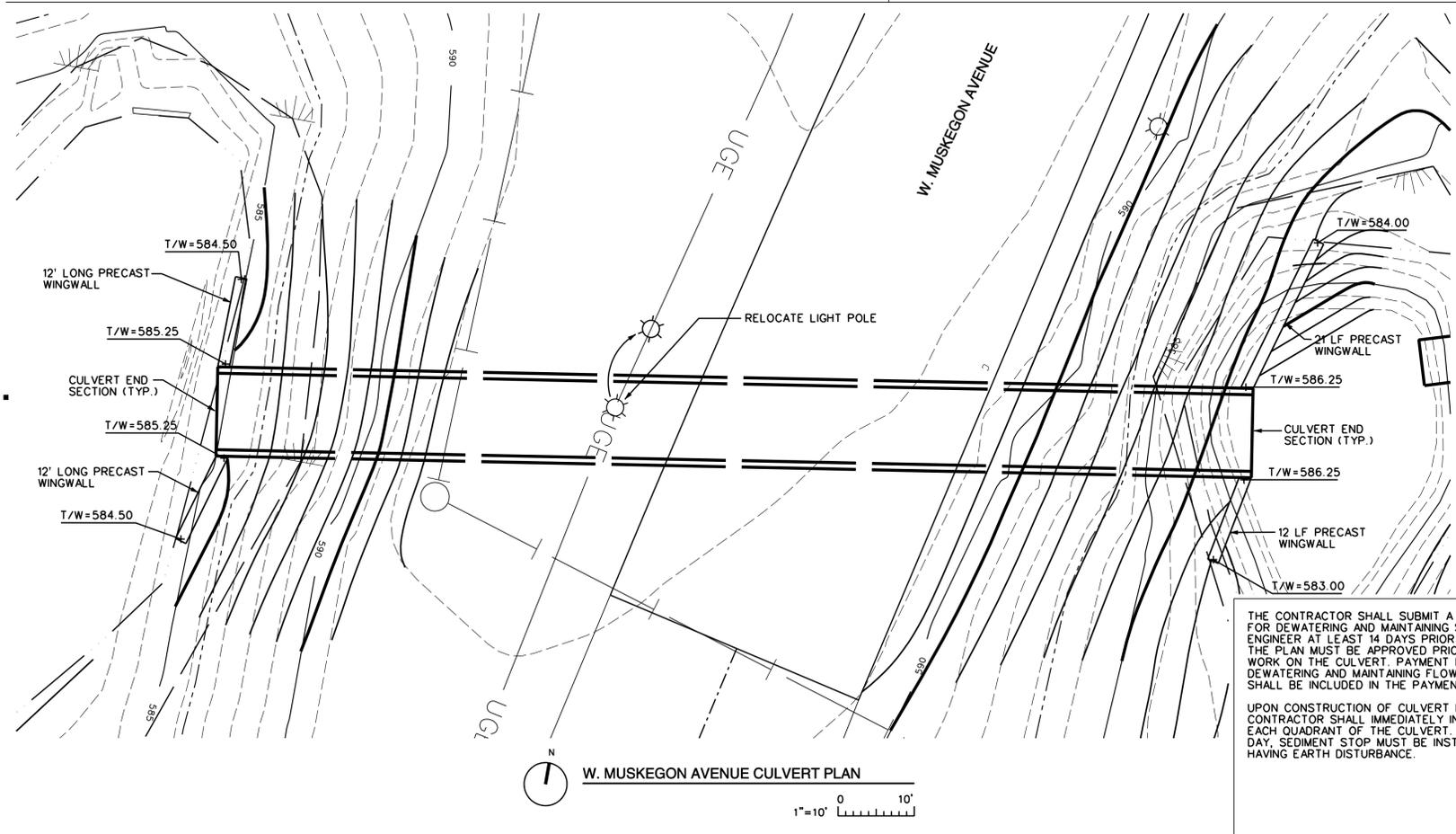
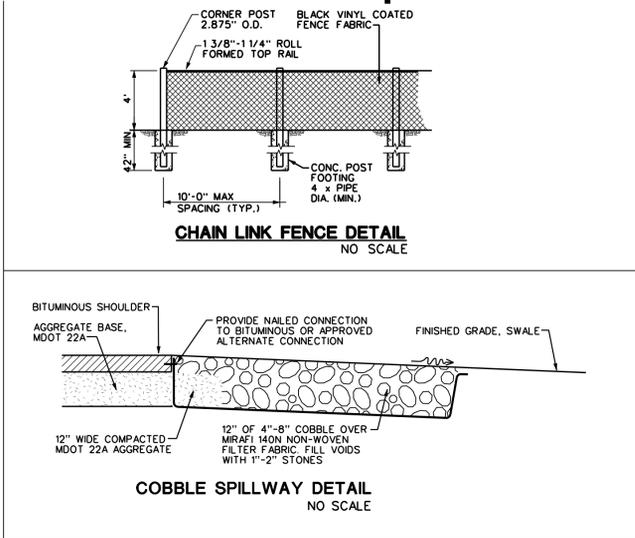
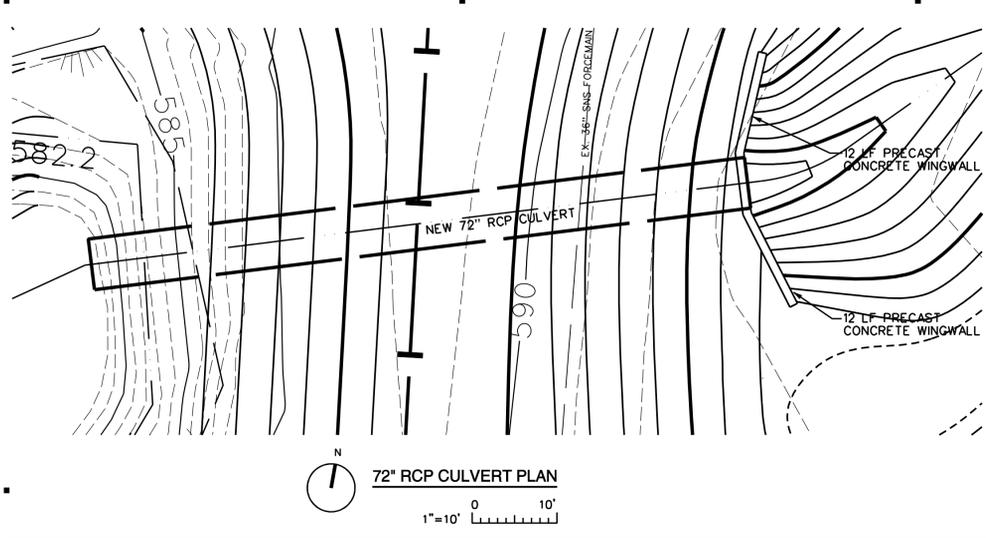
BIDS & CONSTRUCTION ■ OWNER REVIEW ■ MDEQ REVIEW ■ OWNER REVIEW ■

11/14/12 ■ 5/16/11 ■ 3/10/11 ■ 7/14/11 ■

YUBA STREET AND W. MUSKEGON AVENUE CULVERT REPLACEMENT & WETLAND RESTORATION LANDSCAPE PLAN

FILE NO 70080001

C201



THE CONTRACTOR SHALL SUBMIT A CONSTRUCTION PLAN FOR DEWATERING AND MAINTAINING STREAM FLOW TO THE ENGINEER AT LEAST 14 DAYS PRIOR TO BEGINNING THE WORK. THE PLAN MUST BE APPROVED PRIOR TO PERFORMING ANY WORK ON THE CULVERT. PAYMENT FOR ALL ITEMS USED FOR DEWATERING AND MAINTAINING FLOW DURING CONSTRUCTION SHALL BE INCLUDED IN THE PAYMENT FOR THE CULVERT.

UPON CONSTRUCTION OF CULVERT END SECTIONS, THE CONTRACTOR SHALL IMMEDIATELY INSTALL SEDIMENT STOP IN EACH QUADRANT OF THE CULVERT. AT THE END OF EACH WORK DAY, SEDIMENT STOP MUST BE INSTALLED AT ALL QUADRANTS HAVING EARTH DISTURBANCE.

REFER TO DWG. C203 FOR PIER SUPPORT AND WINGWALL DETAILS.

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WEST MICHIGAN SHORELINE REGIONAL DEVELOPMENT COMMISSION
MUSKEGON, MICHIGAN

MUSKEGON LAKE A.O.C. HABITAT RESTORATION AT RYERSON CREEK

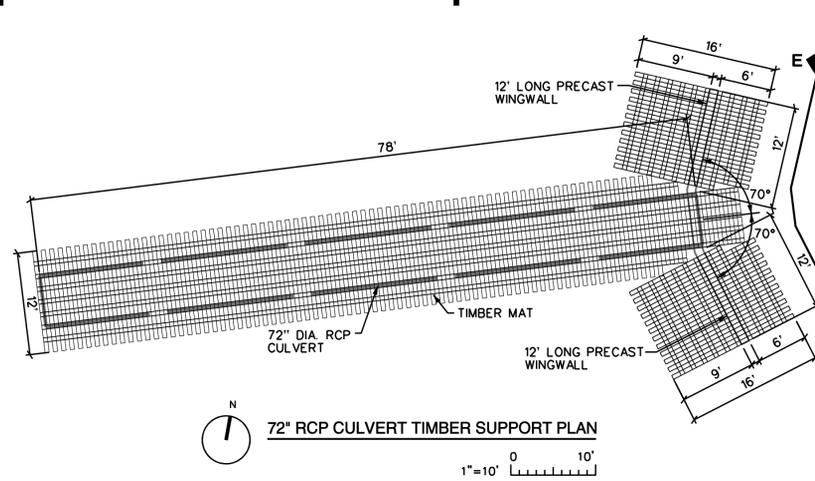
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 CHECKED BY: JPM
 PROJECT LDR: MJD
 DCW: JPM
 AS-BUILT: JPM
 BIDS & CONSTRUCTION OWNER REVIEW: JPM
 MDEQ REVIEW: JPM
 OWNER REVIEW: JPM

11/14/12
 5/16/11
 4/21/11
 3/10/11
 1/14/11

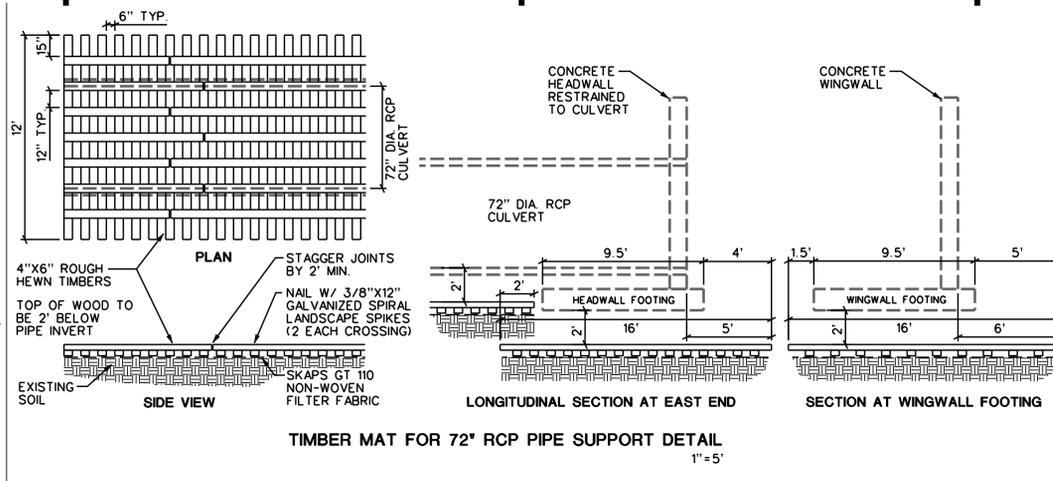
C202

70080001

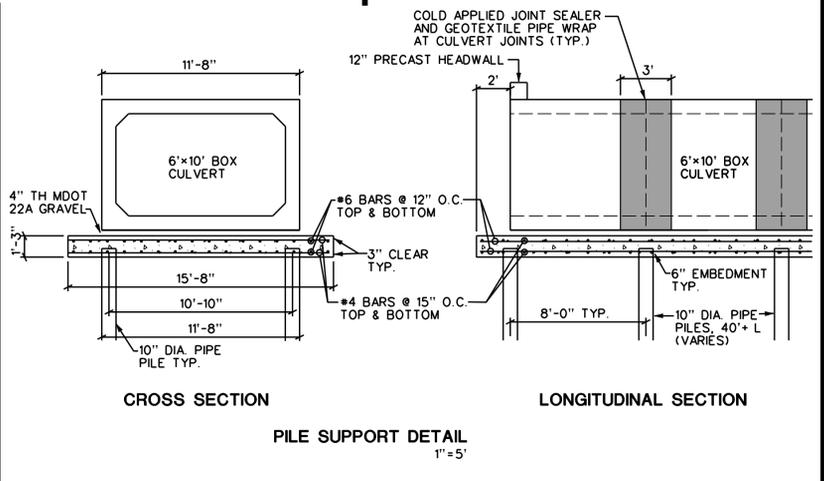
FILE NO: 70080001



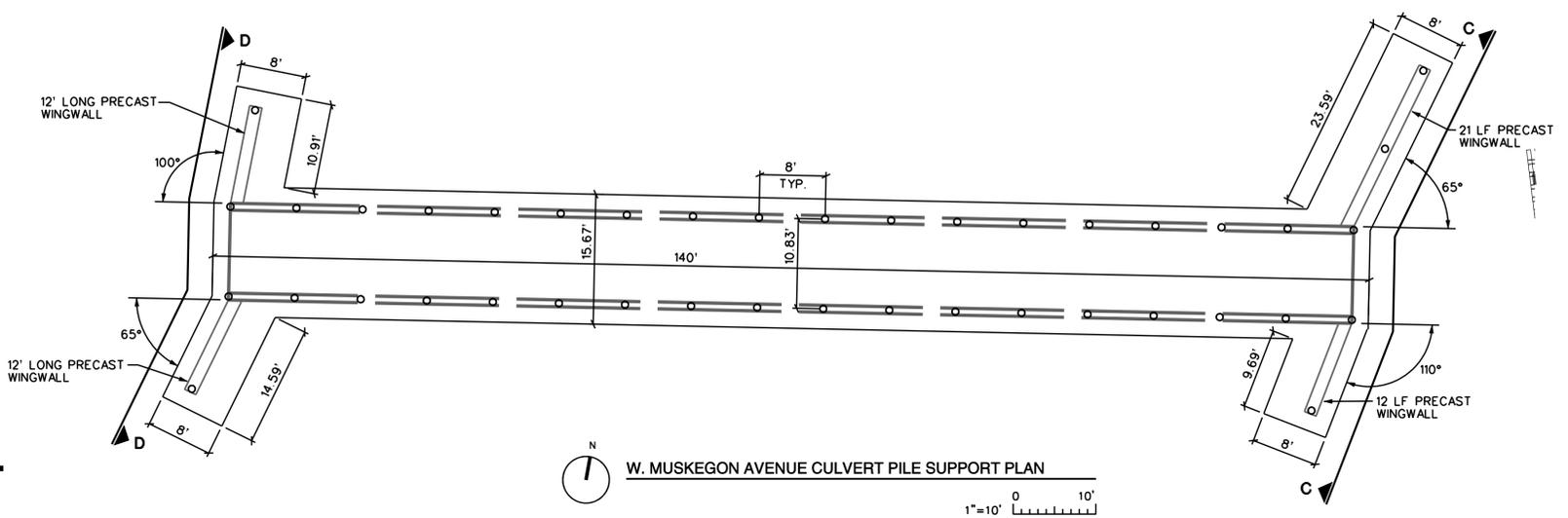
72" RCP CULVERT TIMBER SUPPORT PLAN
1"=10'



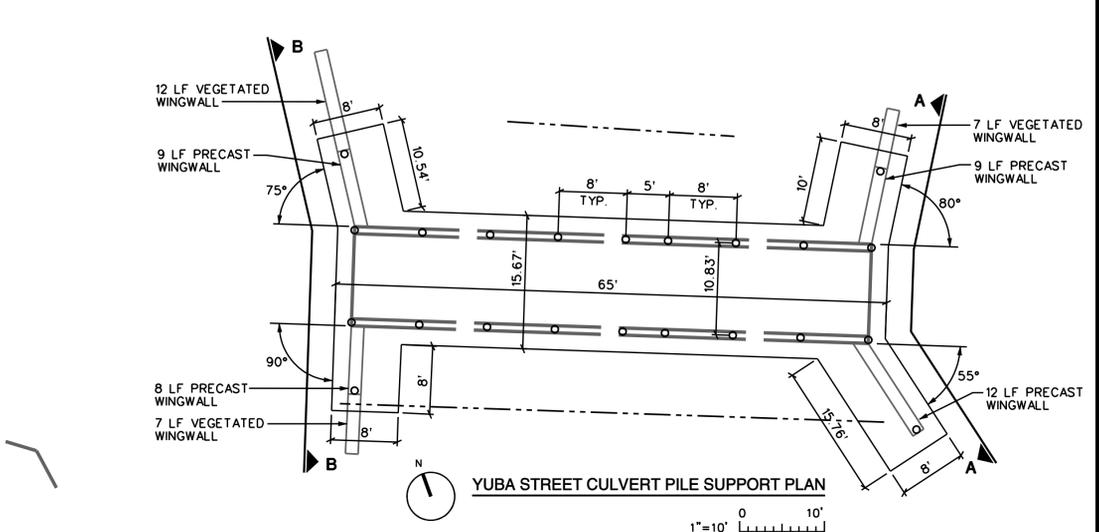
TIMBER MAT FOR 72" RCP PIPE SUPPORT DETAIL
1"=5'



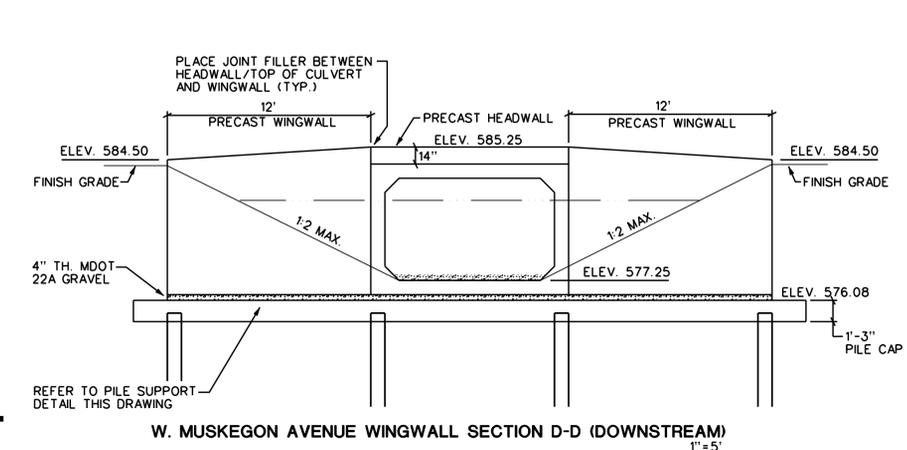
PILE SUPPORT DETAIL
1"=5'



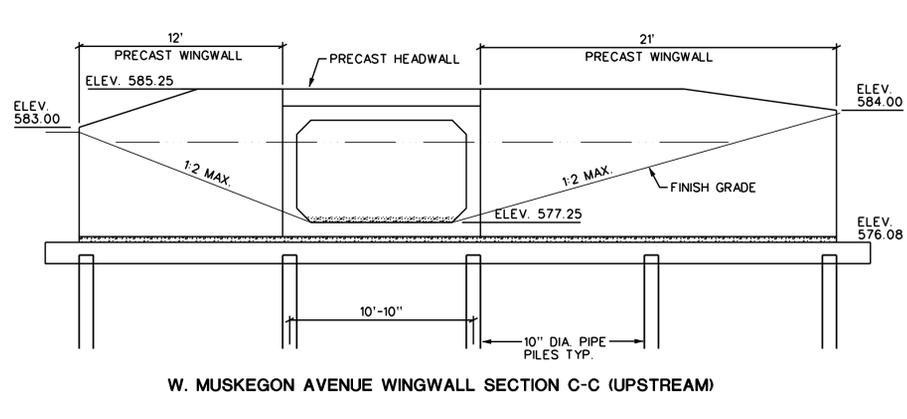
W. MUSKEGON AVENUE CULVERT PILE SUPPORT PLAN
1"=10'



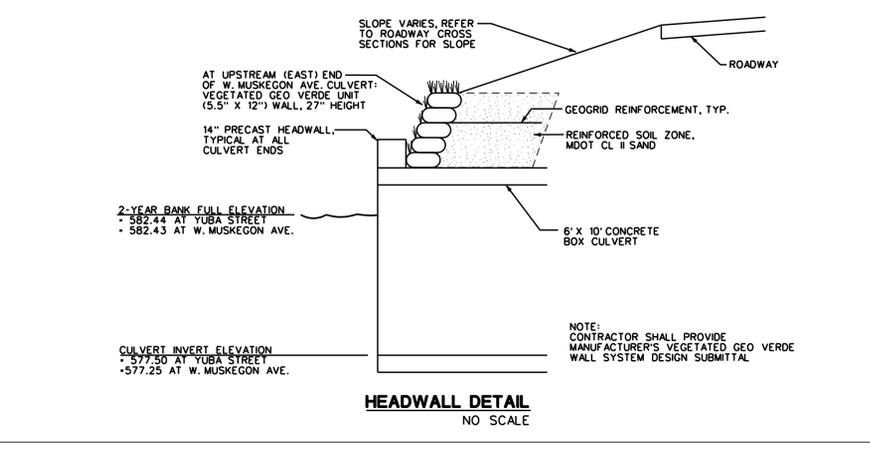
YUBA STREET CULVERT PILE SUPPORT PLAN
1"=10'



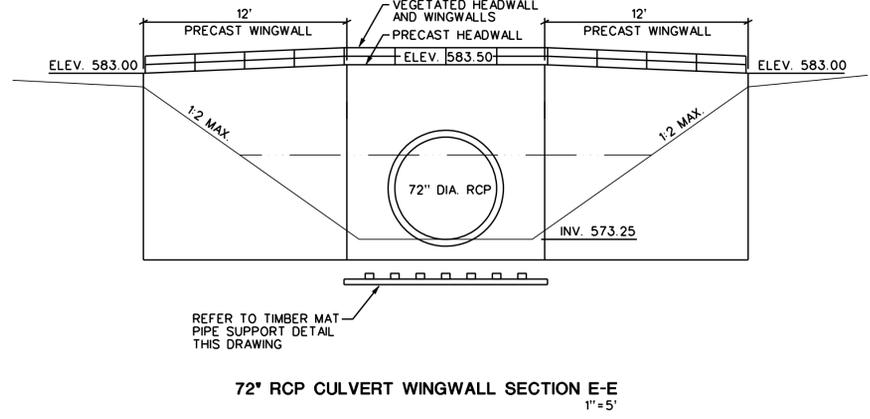
W. MUSKEGON AVENUE WINGWALL SECTION D-D (DOWNSTREAM)
1"=5'



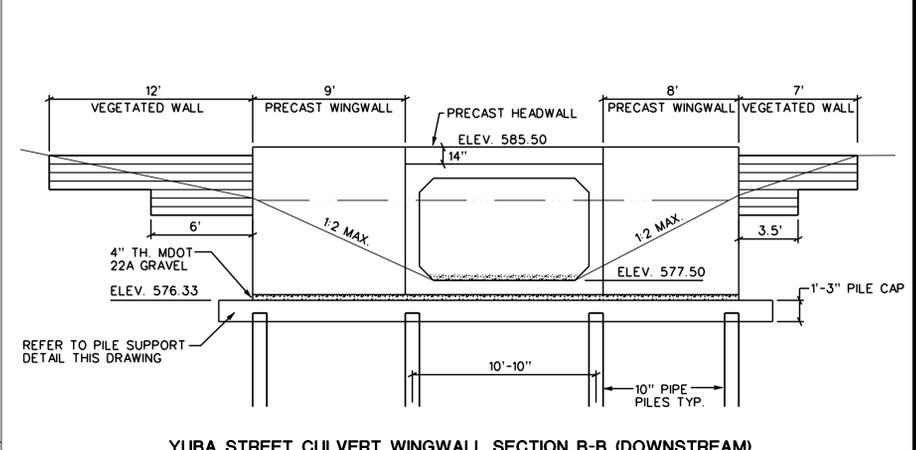
W. MUSKEGON AVENUE WINGWALL SECTION C-C (UPSTREAM)
1"=5'



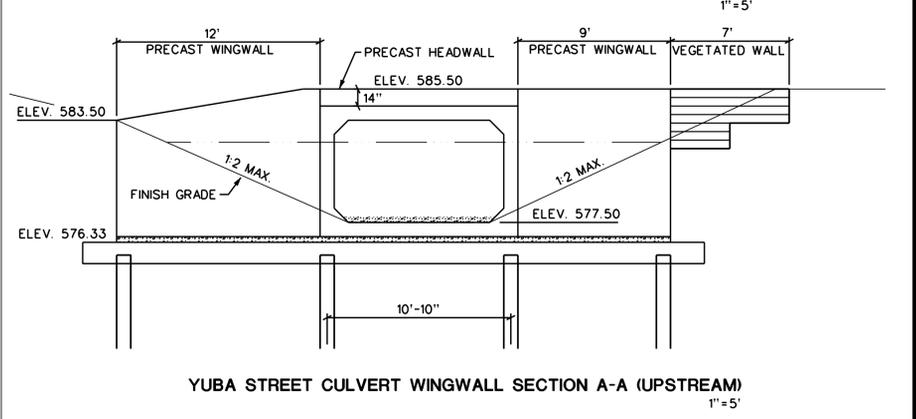
HEADWALL DETAIL
NO SCALE



72" RCP CULVERT WINGWALL SECTION E-E
1"=5'



YUBA STREET CULVERT WINGWALL SECTION B-B (DOWNSTREAM)
1"=5'



YUBA STREET CULVERT WINGWALL SECTION A-A (UPSTREAM)
1"=5'

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WEST MICHIGAN SHORELINE REGIONAL DEVELOPMENT COMMISSION
MUSKEGON LAKE A.O.C. HABITAT RESTORATION AT RYERSON CREEK

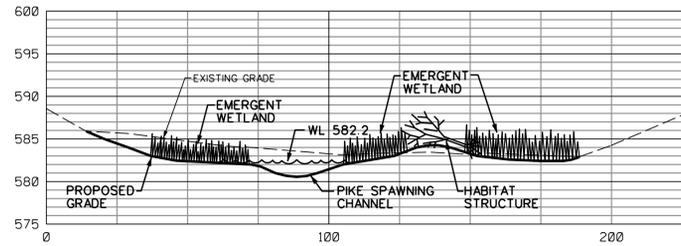
CULVERT PILE SUPPORT AND WINGWALL DETAILS

DCM: JPN, JPN, MJO
DRAWN BY: JCN
CHECKED BY: JPN
PROJECT LDR: MJO

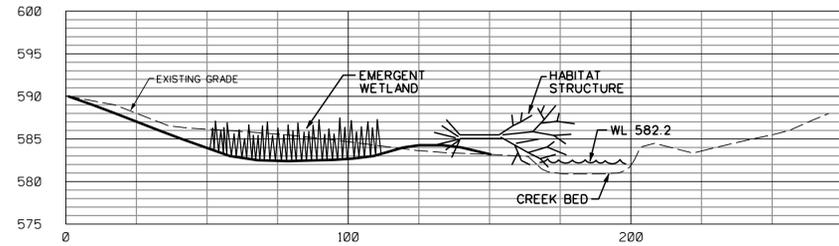
AS-BUILT: 11/14/12
CHANGE ORDER 1: 9/21/11
BIDS & CONSTRUCTION: 5/16/11
OWNER REVIEW: 4/21/11

FILE NO: 70080001

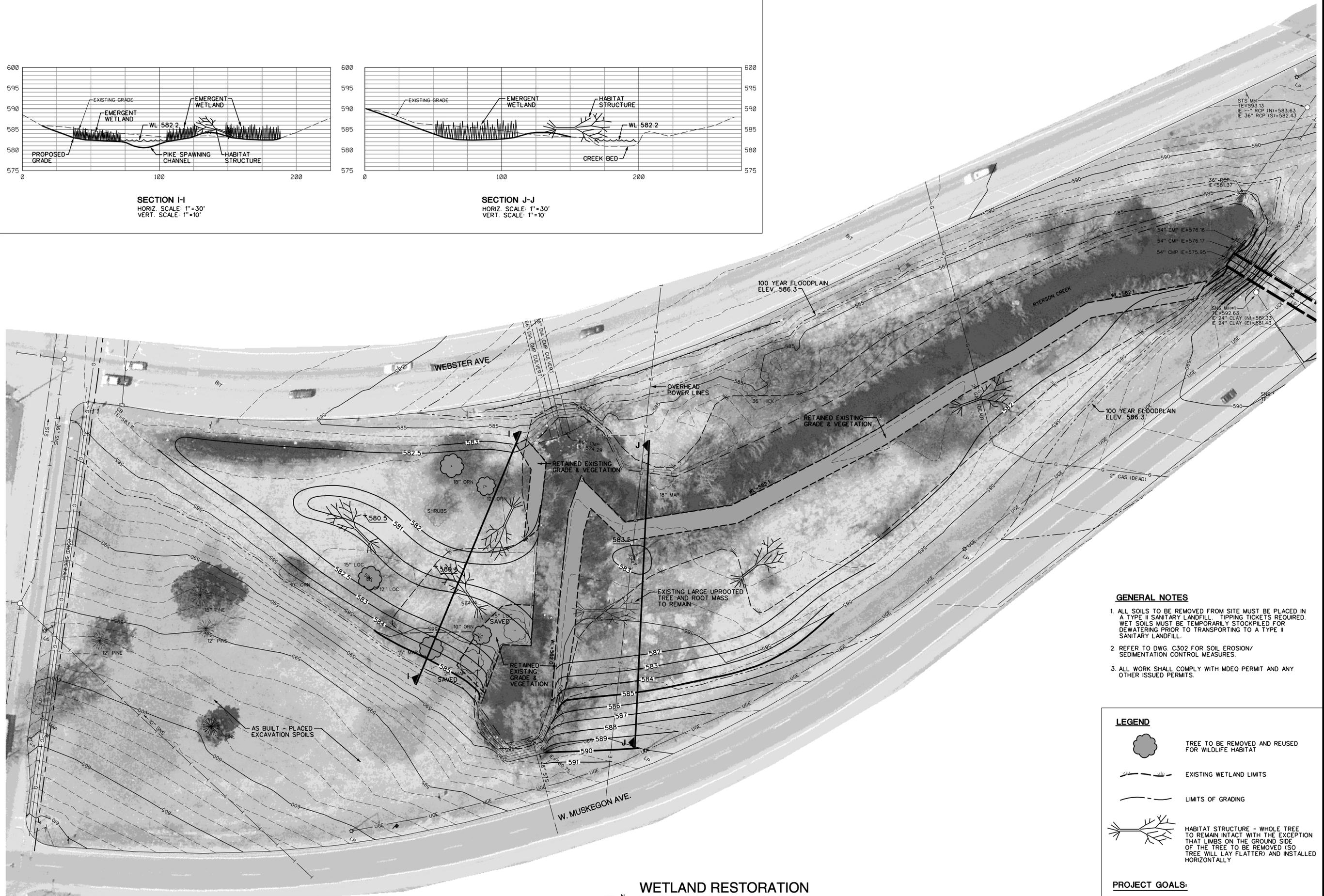
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SECTION I-I
HORIZ. SCALE: 1"=30'
VERT. SCALE: 1"=10'



SECTION J-J
HORIZ. SCALE: 1"=30'
VERT. SCALE: 1"=10'



- GENERAL NOTES**
- ALL SOILS TO BE REMOVED FROM SITE MUST BE PLACED IN A TYPE II SANITARY LANDFILL. TIPPING TICKETS REQUIRED. WET SOILS MUST BE TEMPORARILY STOCKPILED FOR DEWATERING PRIOR TO TRANSPORTING TO A TYPE II SANITARY LANDFILL.
 - REFER TO DWG. C302 FOR SOIL EROSION/ SEDIMENTATION CONTROL MEASURES.
 - ALL WORK SHALL COMPLY WITH MDEQ PERMIT AND ANY OTHER ISSUED PERMITS.

- LEGEND**
- TREE TO BE REMOVED AND REUSED FOR WILDLIFE HABITAT
 - EXISTING WETLAND LIMITS
 - LIMITS OF GRADING
 - HABITAT STRUCTURE - WHOLE TREE TO REMAIN INTACT WITH THE EXCEPTION THAT LIMBS ON THE GROUND SIDE OF THE TREE TO BE REMOVED (SO TREE WILL LAY FLATTER) AND INSTALLED HORIZONTALLY

PROJECT GOALS:

- #7 - RESTORE 1.3 ACRES BETWEEN N. BOUND AND S. BOUND SEAWAY DRIVE



WETLAND RESTORATION & GRADING PLAN

progressive ae
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MUSKEGON LAKE A.O.C. HABITAT RESTORATION AT RYERSON CREEK

WEST MICHIGAN SHORELINE REGIONAL DEVELOPMENT COMMISSION
MUSKEGON, MICHIGAN

WETLAND RESTORATION & GRADING PLAN

FILE NO: 70080001

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EMERGENT WETLAND SEED MIX

BOTANICAL NAME	COMMON NAME	OZ./ACRE
PERMANENT GRASSES/SEDGES/RUSHES		
CAREX COMOSA	BRISTLY SEDGE	2.50
CAREX LACUSTRIS	COMMON LAKE SEDGE	0.25
CAREX LURIDA	BOTTLE BRUSH SEDGE	4.00
CAREX VULPINOIDEA	BROWN FOX SEDGE	6.00
ELEOCHARIS OVATA	BLUNT SPIKE RUSH	1.00
LEERSIA ORYZOIDES	RICE CUT GRASS	3.00
JUNCUS EFFUSUS	COMMON RUSH	1.00
SCIRPUS ACUTUS	HARD-STEMMED BULRUSH	2.50
SCIRPUS PUNGENS	CHAIRMAKER'S RUSH	4.00
SCIRPUS VALIDUS	GREAT BULRUSH	6.00
	TOTAL OZ./ACRE	30.25
TEMPORARY COVER		
AVENA SATIVA	COMMON OAT	360.00
LOLIUM MULTIFLORUM	ANNUAL RYE	100.00
	TOTAL OZ./ACRE	460.00
FORBS/SHRUBS		
ACORUS CALAMUS	SWEET FLAG	0.50
ALISMA SPP.	WATER PLANTAIN MIX	2.00
ASCLEPIAS INCARNATA	SWAMP MILKWEED	1.50
CEPHALANTHUS OCCIDENTALIS	BUTTONBUSH	0.50
DEGONON VERTICILLATUS	SWAMP LOOSESTRIPE	0.50
EUPATORIUM MACULATUM	SPOTTED JOE-PYE WEED	0.50
HIBISCUS SPP.	ROSE MALLOW MIX	3.00
IRIS VIRGINICA	BLUE FLAG	6.00
LOBELIA CARDINALIS	CARDINAL FLOWER	0.25
LOBELIA SIPHILITICA	GREAT BLUE LOBELIA	1.50
LYCOPUS AMERICANUS	COMMON WATER HOREHOUND	0.25
MIMULUS RINGENS	MONKEY FLOWER	1.00
PELTANDRA VIRGINICA	ARROW ARUM	16.00
PENTHORUM SEDOIDES	DITCH STONECROP	0.50
POLYGONUM SPP.	SMARTWEED MIX	0.50
PONTERDERIA CORDATA	PICKEREL WEED	10.00
SAGITTARIA LATIFOLIA	COMMON ARROWHEAD	2.00
SPARGANIUM AMERICANUM	AMERICAN BUR REED	1.00
SPARGANIUM EURYCARPUM	COMMON BUR REED	4.00
VERBENA HASTATA	BLUE VERVAIN	1.00
	TOTAL OZ./ACRE	52.50

WETLAND EDGE SEED MIX

BOTANICAL NAME	COMMON NAME	OZ./ACRE
PERMANENT GRASSES/SEDGES/RUSHES		
CAREX COMOSA	BRISTLY SEDGE	1.00
CAREX CRISTATELLA	CRESTED OVAL SEDGE	2.00
CAREX FRANKII	BRISTLY CATTAIL SEDGE	6.00
CAREX VULPINOIDEA	BROWN FOX SEDGE	3.00
ELEOCHARIS PALUSTRIS	GREAT SPIKE RUSH	0.50
ELYMUS VIRGINICUS	VIRGINIA WILD RYE	12.00
GLYCERIA STRIATA	FOWL MANNA GRASS	1.00
LEERSIA ORYZOIDES	RICE CUT GRASS	1.50
SCIRPUS ATROVIRENS	DARK GREEN RUSH	1.00
SCIRPUS CYPERINUS	WOOL GRASS	0.75
SCIRPUS PUNGENS	CHAIRMAKER'S RUSH	1.00
SCIRPUS VALIDUS	GREAT BULRUSH	2.50
	TOTAL OZ./ACRE	32.25
TEMPORARY COVER		
AVENA SATIVA	COMMON OAT	360.00
LOLIUM MULTIFLORUM	ANNUAL RYE	100.00
	TOTAL OZ./ACRE	460.00
FORBS		
ACORUS CALAMUS	SWEET FLAG	0.50
ALISMA SPP.	WATER PLANTAIN MIX	2.00
ASCLEPIAS INCARNATA	SWAMP MILKWEED	1.00
ASTER PUNICEUS	BRISTLY ASTER	1.00
BIDENS SPP.	BIDENS MIX	2.00
EUPATORIUM PERFOOLIATUM	COMMON BONESSET	1.00
HELENIUM AUTUMNALE	SNEEZEWEED	2.00
IRIS VIRGINICA	BLUE FLAG	2.50
LOBELIA SIPHILITICA	GREAT BLUE LOBELIA	1.00
LYCOPUS AMERICANUS	COMMON WATER HOREHOUND	0.25
MIMULUS RINGENS	MONKEY FLOWER	1.50
PENTHORUM SEDOIDES	DITCH STONECROP	0.50
POLYGONUM SPP.	SMARTWEED MIX	0.50
RUDBECKIA HIRTA	BLACK-EYED SUSAN	5.00
RUDBECKIA LACINIATA	WILD GOLDEN GLOW	0.75
SAGITTARIA LATIFOLIA	COMMON ARROWHEAD	2.00
SENNA HEBECARPA	WILD SENNA	2.00
SPARGANIUM EURYCARPUM	COMMON BUR REED	4.00
THALICTRUM DASycARPUM	PURPLE MEADOW RUE	0.50
VERBENA HASTATA	BLUE VERVAIN	1.50
VERNONIA SPP.	IRONWEED MIX	2.00
	TOTAL OZ./ACRE	33.50

UPLAND LAWN RESTORATION SEED MIX

EMERALD PARK TALL FESCUE BLEND
SUPPLIED BY COMMERC CORPORATION
1-616-541-3309 OR APPROVED EQUAL

SEED AT RATE OF 10-15 LBS. PER 1,000 SQ.FT.

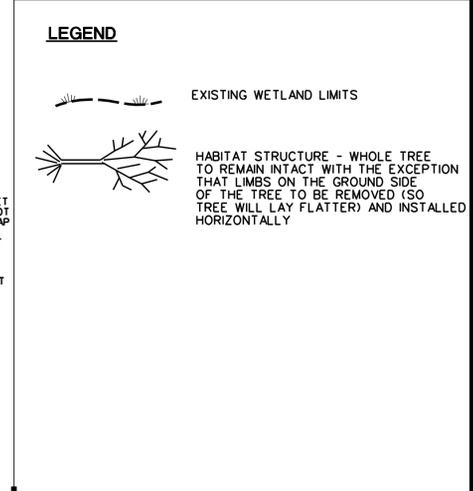
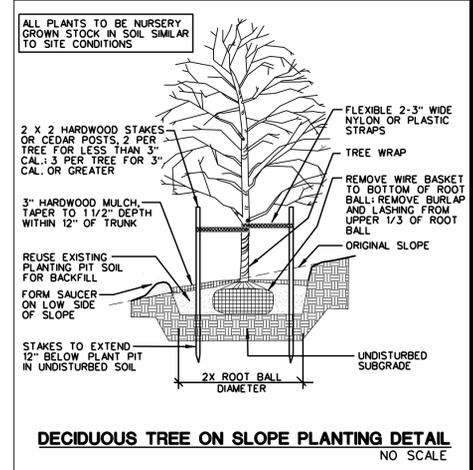
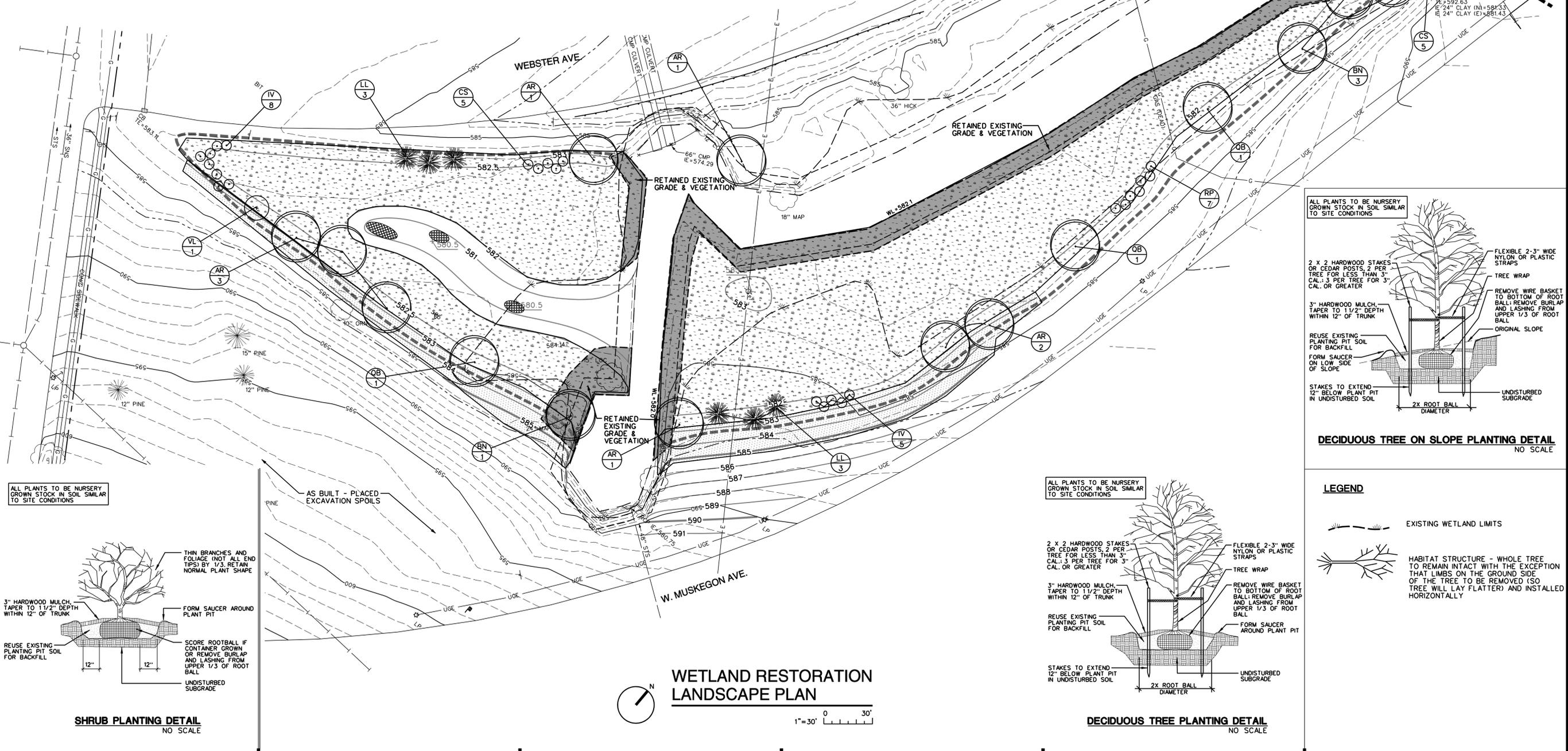
NOTE: SEED MIX FOR ALL DISTURBED NON-WETLAND MIX AREAS.
SEE GRADING LIMITS.

PLANT LIST (SHEET SPECIFIC)

QUANT.	ABBRV.	BOTANICAL NAME	COMMON NAME	SIZE	COMMENTS
9	AR	ACER RUBRUM	RED MAPLE	1 1/2" CAL.	B & B
4	BN	BETULA NIGRA	RIVER BIRCH	1 1/2" CAL.	B & B
17	CS	CORNUS SERICEA	RED STEMMED DOGWOOD	1 GAL.	CONT.
13	IV	ILEX VERTICILLATA	MICHIGAN HOLLY	1 GAL.	CONT.
6	LL	LARIX LARICINA	TAMARACK	1 GAL.	CONT.
3	OB	QUERCUS BICOLOR	SWAMP WHITE OAK	1 1/2" CAL.	B & B
7	RP	ROSA PALUSTRIS	SWAMP ROSE	1 GAL.	CONT.
2	VL	VIBURNUM LENTAGO	NANNYBERRY	1 GAL.	CONT.

NOTE: CONTRACTOR TO INCLUDE 15 BUTTONBUSH AND 15 PUSSY WILLOWS TO PLANT PER ARCHITECT'S DIRECTION IN THE FIELD ON KNOLLS WITHIN ROUGHLY GRADED WETLAND AREAS

- GENERAL NOTES:**
- SHRUBS AND TREE SAUCERS TO RECEIVE 3" SHREDDED HARDWOOD MULCH.
 - ALL AREAS DISTURBED BY CONSTRUCTION TO RECEIVE 6" TOPSOIL AND SEEDED UNLESS SHOWN OTHERWISE ON PLANS.
 - CONTRACTOR MAY BE REQUIRED TO DO MINOR CLEARING TO PLANT IN NATURAL UNDISTURBED AREAS.
 - ALL WORK SHALL COMPLY WITH MDEQ PERMIT AND ANY OTHER ISSUED PERMITS.
 - CONTRACTOR RESPONSIBLE FOR WATERING PLANTS AND SEED AREAS TO MAINTAIN IN HEALTHY CONDITION.



WETLAND RESTORATION LANDSCAPE PLAN

1" = 30'

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WETLAND RESTORATION LANDSCAPE PLAN

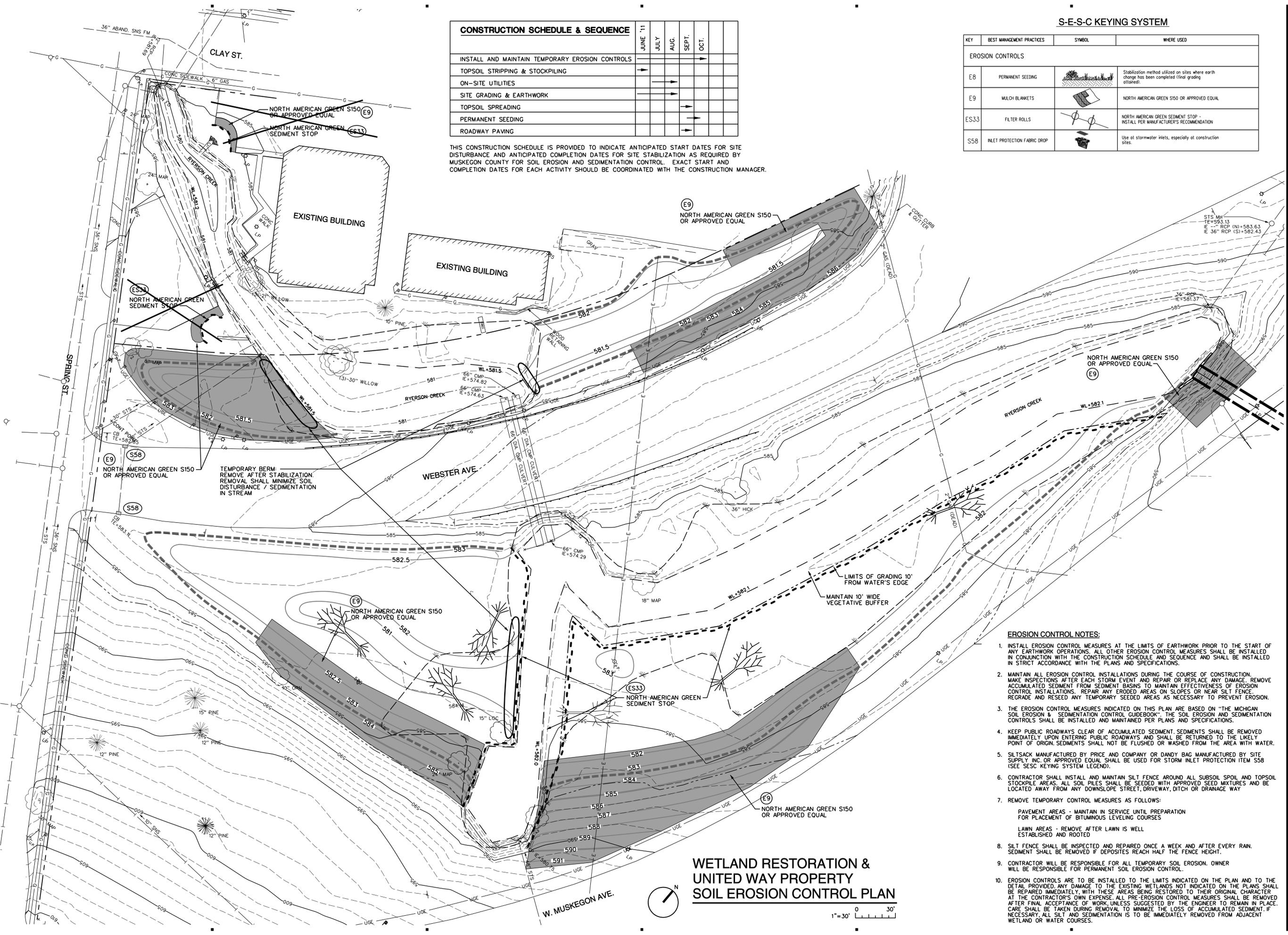
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CONSTRUCTION SCHEDULE & SEQUENCE	JUNE	JULY	AUG.	SEPT.	OCT.
INSTALL AND MAINTAIN TEMPORARY EROSION CONTROLS	→				
TOPSOIL STRIPPING & STOCKPILING		→			
ON-SITE UTILITIES			→		
SITE GRADING & EARTHWORK				→	
TOPSOIL SPREADING					→
PERMANENT SEEDING					→
ROADWAY PAVING					→

THIS CONSTRUCTION SCHEDULE IS PROVIDED TO INDICATE ANTICIPATED START DATES FOR SITE DISTURBANCE AND ANTICIPATED COMPLETION DATES FOR SITE STABILIZATION AS REQUIRED BY MUSKOGON COUNTY FOR SOIL EROSION AND SEDIMENTATION CONTROL. EXACT START AND COMPLETION DATES FOR EACH ACTIVITY SHOULD BE COORDINATED WITH THE CONSTRUCTION MANAGER.

S-E-S-C KEYING SYSTEM

KEY	BEST MANAGEMENT PRACTICES	SYMBOL	WHERE USED
EROSION CONTROLS			
E8	PERMANENT SEEDING		Stabilization method utilized on sites where earth change has been completed (final grading allowed).
E9	MULCH BLANKETS		NORTH AMERICAN GREEN S150 OR APPROVED EQUAL.
ES33	FILTER ROLLS		NORTH AMERICAN GREEN SEDIMENT STOP - INSTALL PER MANUFACTURER'S RECOMMENDATION.
S58	INLET PROTECTION FABRIC DROP		Use of stormwater inlets, especially at construction sites.



EROSION CONTROL NOTES:

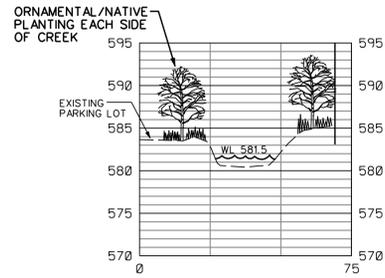
- INSTALL EROSION CONTROL MEASURES AT THE LIMITS OF EARTHWORK PRIOR TO THE START OF ANY EARTHWORK OPERATIONS. ALL OTHER EROSION CONTROL MEASURES SHALL BE INSTALLED IN CONJUNCTION WITH THE CONSTRUCTION SCHEDULE AND SEQUENCE AND SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.
- MAINTAIN ALL EROSION CONTROL INSTALLATIONS DURING THE COURSE OF CONSTRUCTION. MAKE INSPECTIONS AFTER EACH STORM EVENT AND REPAIR OR REPLACE ANY DAMAGE. REMOVE ACCUMULATED SEDIMENT BASINS TO MAINTAIN EFFECTIVENESS OF EROSION CONTROL INSTALLATIONS. REPAIR ANY ERODED AREAS ON SLOPES OR NEAR SILT FENCE. REGRADE AND RESEED ANY TEMPORARY SEEDING AREAS AS NECESSARY TO PREVENT EROSION.
- THE EROSION CONTROL MEASURES INDICATED ON THIS PLAN ARE BASED ON "THE MICHIGAN SOIL EROSION & SEDIMENTATION CONTROL GUIDEBOOK". THE SOIL EROSION AND SEDIMENTATION CONTROLS SHALL BE INSTALLED AND MAINTAINED PER PLANS AND SPECIFICATIONS.
- KEEP PUBLIC ROADWAYS CLEAR OF ACCUMULATED SEDIMENT. SEDIMENTS SHALL BE REMOVED IMMEDIATELY UPON ENTERING PUBLIC ROADWAYS AND SHALL BE RETURNED TO THE LIKELY POINT OF ORIGIN. SEDIMENTS SHALL NOT BE FLUSHED OR WASHED FROM THE AREA WITH WATER.
- SILTSACK MANUFACTURED BY PRICE AND COMPANY OR DANDY BAG MANUFACTURED BY SITE SUPPLY INC. OR APPROVED EQUAL SHALL BE USED FOR STORM INLET PROTECTION ITEM S58 (SEE SESC KEYING SYSTEM LEGEND).
- CONTRACTOR SHALL INSTALL AND MAINTAIN SILT FENCE AROUND ALL SUBSOIL SPOIL AND TOPSOIL STOCKPILE AREAS. ALL SOIL PILES SHALL BE SEEDING WITH APPROVED SEED MIXTURES AND BE LOCATED AWAY FROM ANY DOWNSLOPE STREET, DRIVEWAY, DITCH OR DRAINAGE WAY.
- REMOVE TEMPORARY CONTROL MEASURES AS FOLLOWS:
PAVEMENT AREAS - MAINTAIN IN SERVICE UNTIL PREPARATION FOR PLACEMENT OF BITUMINOUS LEVELING COURSES
LAWN AREAS - REMOVE AFTER LAWN IS WELL ESTABLISHED AND ROOTED
- SILT FENCE SHALL BE INSPECTED AND REPAIRED ONCE A WEEK AND AFTER EVERY RAIN. SEDIMENT SHALL BE REMOVED IF DEPOSITS REACH HALF THE FENCE HEIGHT.
- CONTRACTOR WILL BE RESPONSIBLE FOR ALL TEMPORARY SOIL EROSION. OWNER WILL BE RESPONSIBLE FOR PERMANENT SOIL EROSION CONTROL.
- EROSION CONTROLS ARE TO BE INSTALLED TO THE LIMITS INDICATED ON THE PLAN AND TO THE DETAIL PROVIDED. ANY DAMAGE TO THE EXISTING WETLANDS NOT INDICATED ON THE PLANS SHALL BE REPAIRED IMMEDIATELY, WITH THESE AREAS BEING RESTORED TO THEIR ORIGINAL CHARACTER AT THE CONTRACTOR'S OWN EXPENSE. ALL PRE-EROSION CONTROL MEASURES SHALL BE REMOVED AFTER FINAL ACCEPTANCE OF WORK UNLESS SUGGESTED BY THE ENGINEER TO REMAIN IN PLACE. CARE SHALL BE TAKEN DURING REMOVAL TO MINIMIZE THE LOSS OF ACCUMULATED SEDIMENT. IF NECESSARY, ALL SILT AND SEDIMENTATION IS TO BE IMMEDIATELY REMOVED FROM ADJACENT WETLAND OR WATER COURSES.

WETLAND RESTORATION & UNITED WAY PROPERTY SOIL EROSION CONTROL PLAN

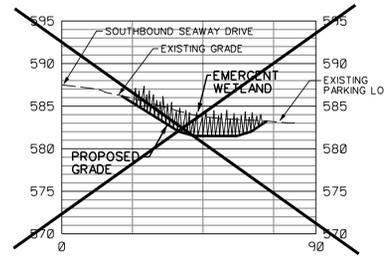


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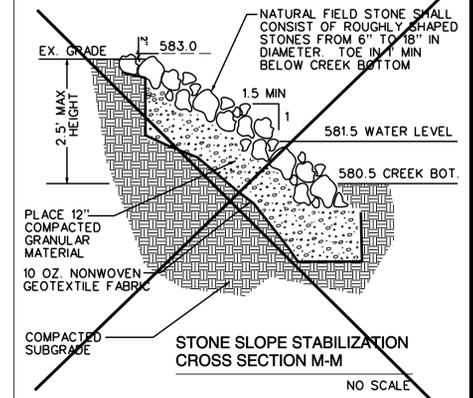
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 WETLAND RESTORATION & UNITED WAY PROPERTY SOIL EROSION CONTROL PLAN 11/17/12
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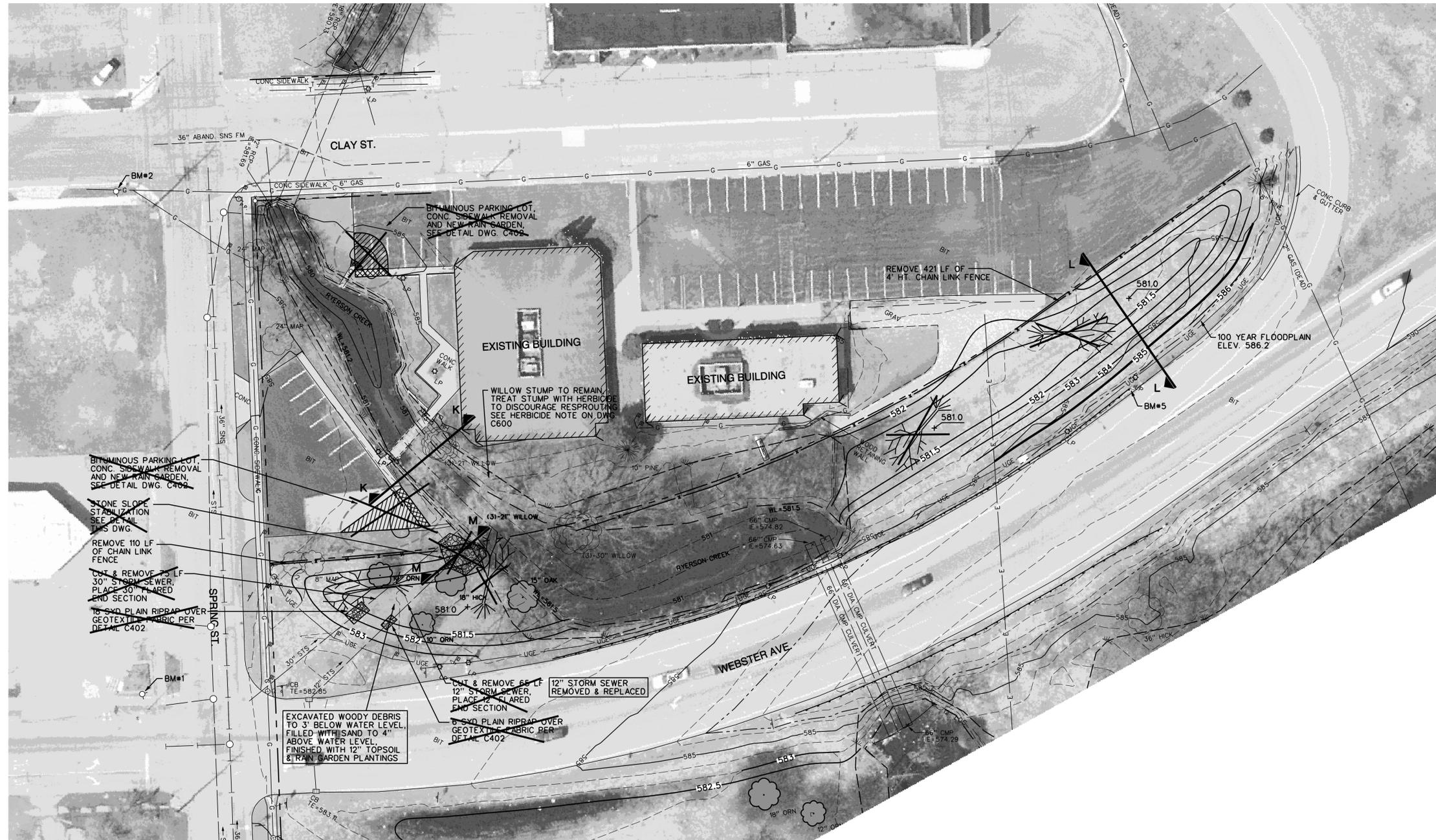
SECTION K-K
HORIZ. SCALE: 1"=30'
VERT. SCALE: 1"=10'



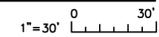
SECTION L-L
HORIZ. SCALE: 1"=30'
VERT. SCALE: 1"=10'



STONE SLOPE STABILIZATION CROSS SECTION M-M
NO SCALE



**UNITED WAY PROPERTY
HABITAT RESTORATION
GRADING PLAN**



GENERAL NOTES

- ALL SOILS TO BE REMOVED FROM SITE MUST BE PLACED IN A TYPE II SANITARY LANDFILL. TIPPING TICKETS REQUIRED. WET SOILS MUST BE TEMPORARILY STOCKPILED FOR DEWATERING PRIOR TO TRANSPORTING TO A TYPE II SANITARY LANDFILL.
- REFER TO DWG. C302 FOR SOIL EROSION / SEDIMENTATION CONTROL MEASURES.
- CONTRACTOR TO COORDINATE ACCESS AND SCHEDULING WITH PRIVATE PROPERTY OWNERS.

LEGEND

- TREE TO BE REMOVED AND REUSED FOR WILDLIFE HABITAT
- EXISTING WETLAND LIMITS
- LIMITS OF GRADING
- HABITAT STRUCTURE - WHOLE TREE TO REMAIN INTACT WITH THE EXCEPTION THAT LIMBS ON THE GROUND SIDE OF THE TREE TO BE REMOVED (SO TREE WILL LAY FLATTER) AND INSTALLED HORIZONTALLY

PROJECT GOALS:

- #8 - IMPROVE FISH AND WILDLIFE HABITAT. INSTALL NATIVE PLANTS TO ABSORB STORMWATER RUNOFF AND MINIMIZE EROSION (BIOENGINEERED CREEK EDGES)
- #9 - SHALLOW WETLAND RESTORATION AND STORMWATER RETENTION - .3 ACRES

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MUSKOGON, MICHIGAN

UNITED WAY PROPERTY HABITAT RESTORATION GRADING PLAN

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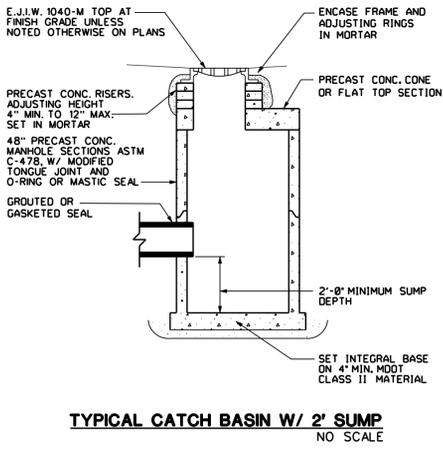
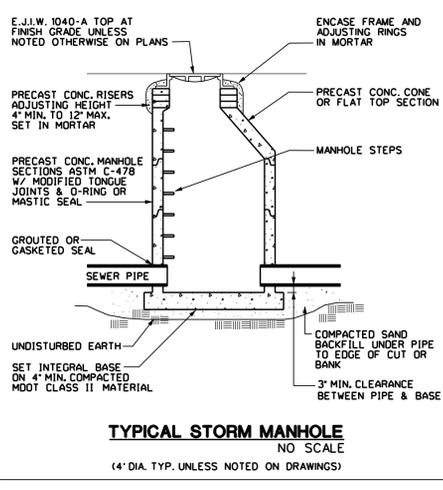
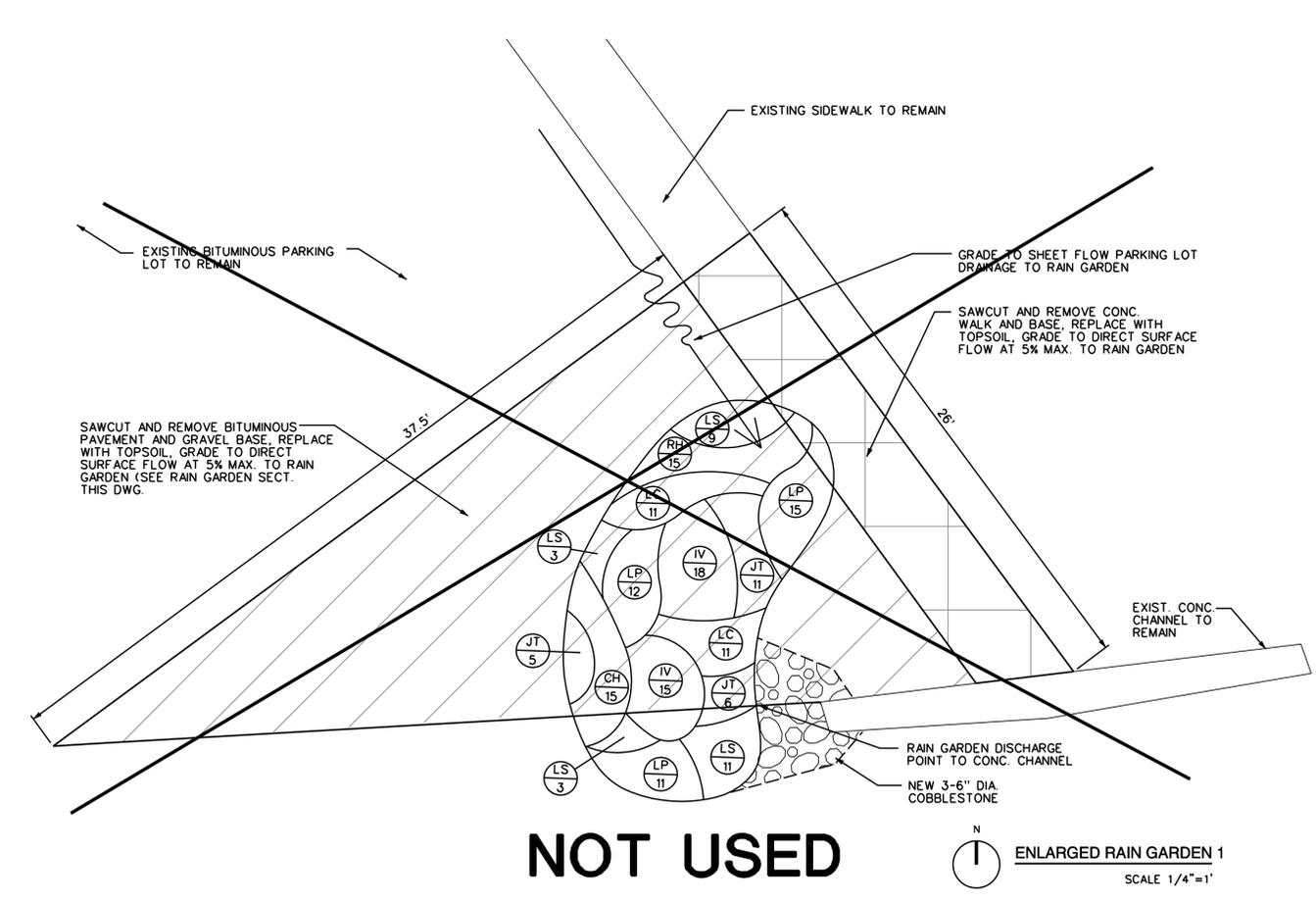
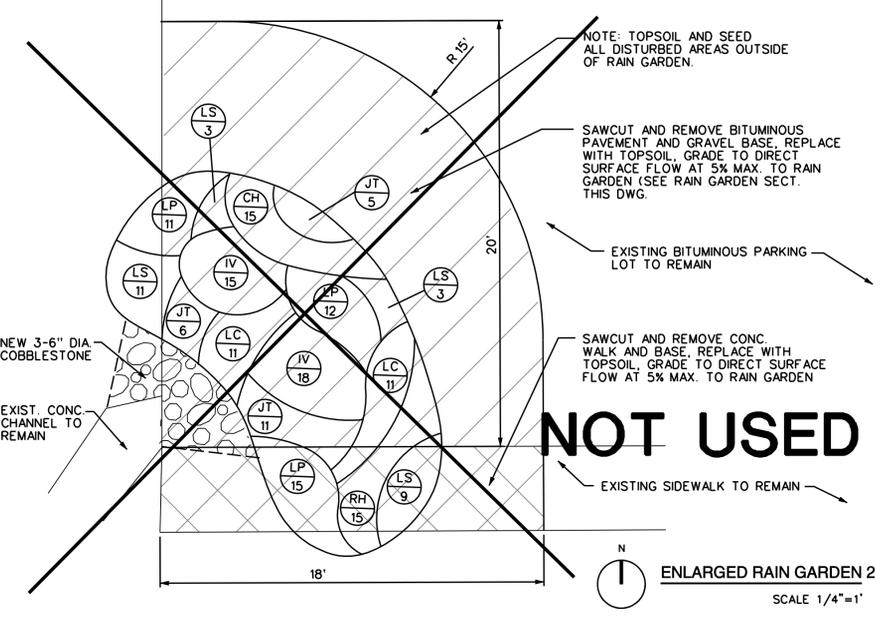
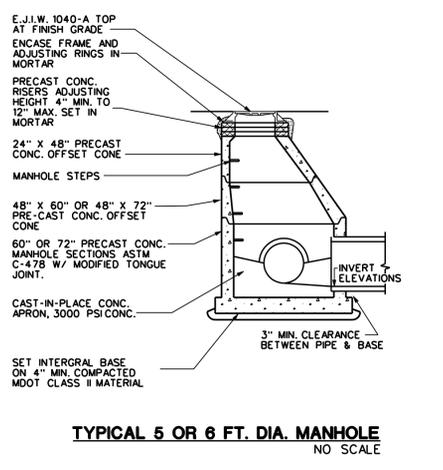
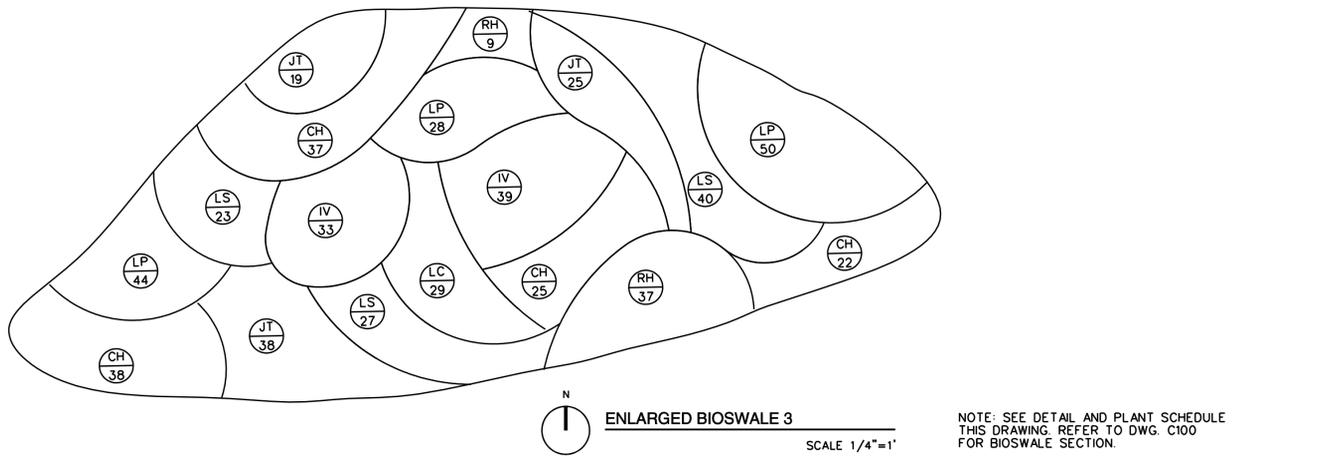
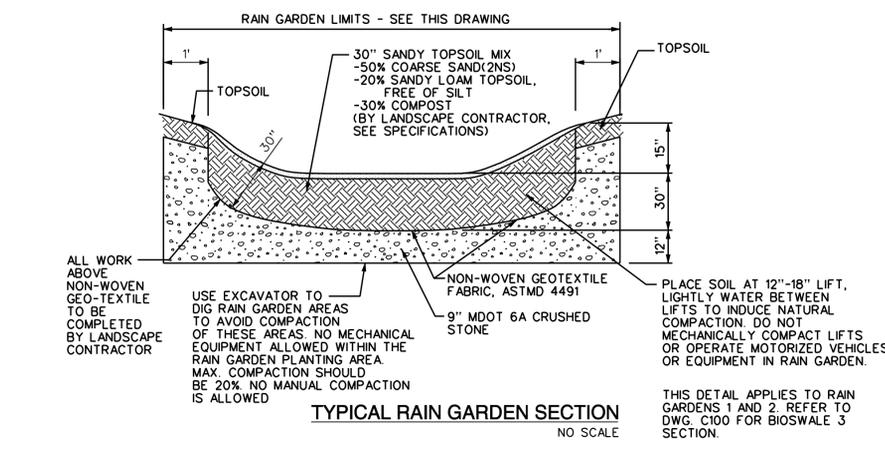
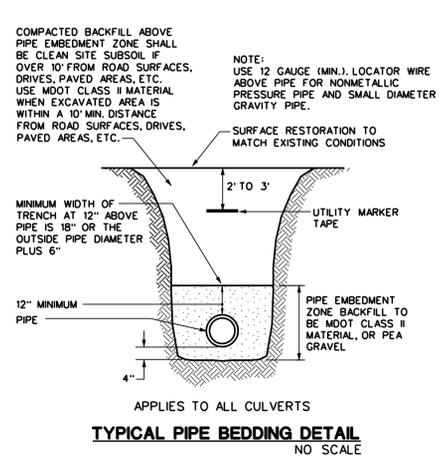
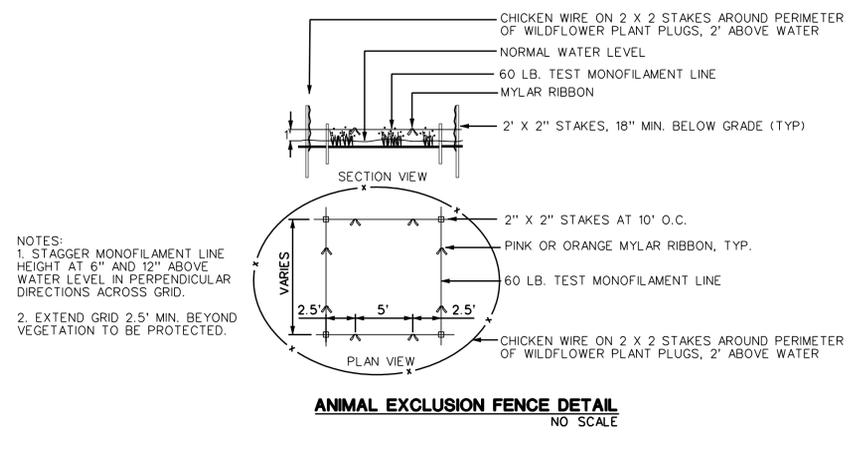
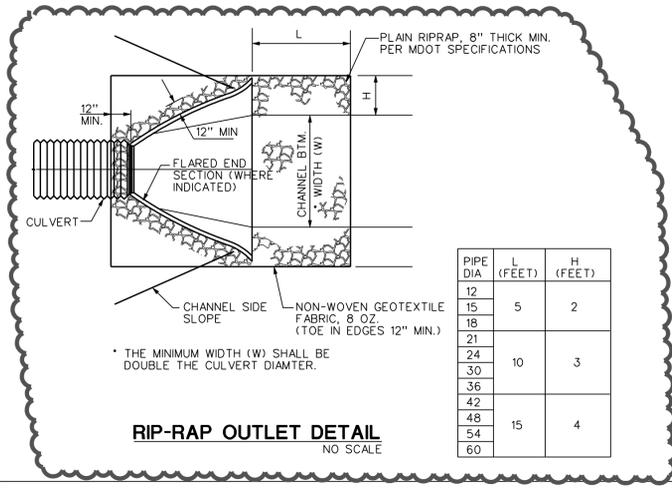
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RAIN GARDENS PLANT LIST

NOTE: RAIN GARDEN PLANTINGS FOR UNITED WAY WERE PLACED IN LOW AREA ADJACENT TO RYERSON CREEK AT WEBSTER AVE. / SPRING ST.

131	CH	CAREX HYSTRICINA	BOTTLE BRUSH SEDGE	2" X 4" PLUG	12" O.C.
138	IV	IRIS VIRGINICA SHREVI	BLUE FLAG IRIS	2" X 4" PLUG	12" O.C.
126	JT	JUNCUS TORREYI	TORREY'S RUSH	2" X 4" PLUG	12" O.C.
73	LC	LOBELIA CARDINALIS	CARDINAL FLOWER	2" X 4" PLUG	12" O.C.
198	LP	LIATRIS SPICATA	MARSH BLAZING STAR	2" X 4" PLUG	12" O.C.
142	LS	LOBELIA SIPHILITICA	BLUE LOBELIA	2" X 4" PLUG	12" O.C.
113	RH	RUDBECKIA HIRTA	BLACK-EYED SUSAN	2" X 4" PLUG	12" O.C.

NOTE: IN CASE OF DISCREPANCY BETWEEN PLANT LIST AND PLANS, THE PLANS SHALL PREVAIL.

NOTE: TOTALS INCLUDE PLANTS FOR THREE RAIN GARDENS.

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70800001 ■ **C402** ■ DETAILS

PLANT LIST (SHEET SPECIFIC)

QUANT.	ABBRV.	BOTANICAL NAME	COMMON NAME	SIZE	COMMENTS
2	AR	ACER RUBRUM	RED MAPLE	1 1/2" CAL.	B & B
6	CO	CEPHALANTHUS OCCIDENTALIS	BUTTONBUSH	1 GAL.	CONT.
9	CS	CORNUS SERICEA	RED STEMMED DOGWOOD	1 GAL.	CONT.
5	IV	ILEX VERTICILLATA	MICHIGAN HOLLY	1 GAL.	CONT.
2	LL	LARIX LARICINA	TAMARACK	1 GAL.	CONT.
1	QB	QUERCUS BICOLOR	SWAMP WHITE OAK	1 1/2" CAL.	B & B
3	RP	ROSA PALUSTRIS	SWAMP ROSE	1 GAL.	CONT.
3	SD	SALIX DISCOLOR	PUSSY WILLOW	1 GAL.	CONT.
3	VL	VIBURNUM LENTAGO	NANNYBERRY	1 GAL.	CONT.

NOTE: PLANTS TO BE LOCATED IN THE FIELD (PATTERNED AREA) BY ARCHITECT. CONTRACTOR TO PROVIDE MARKED STAKES FOR LOCATION EFFORT. NOTIFY ARCHITECT ONE WEEK IN ADVANCE. CONTRACTOR TO INCLUDE MINOR BRUSH CLEARING FOR PLANTING IN BID.

INVASIVE PLANT REMOVAL/CONTROL

CONTRACTOR TO REMOVE ALL INVASIVE/NUISANCE PLANTS SUCH AS HONEYSUCKLE, RUSSIAN OLIVE, REED CANARY GRASS, BUCKTHORN, GARLIC MUSTARD, BITTERSWEET VINE AND WILD GRAPE VINE FROM THE DESIGNATED AREA AND HAULED OFFSITE AND DESTROYED. WOODY PLANT MATERIAL TO BE CUT DOWN AT THE SOIL SURFACE LEAVING STUMP AND ROOT MASS INTACT. BRUSH ON HERBICIDE CONTAINING TRICLOPYR 3 TO CUT SURFACE OF STUMP TO ELIMINATE REGROWTH. WORK TO BE PERFORMED BY LICENSED APPLICATOR IN ACCORDANCE WITH REGULATORY STANDARDS AND MANUFACTURER'S DIRECTIONS. HERBACEOUS INVASIVE PLANTS TO BE TREATED BY WICKING HERBICIDE CONTAINING GLYPHOSATE ON LEAF SURFACES. WORK TO BE PERFORMED BY LICENSED APPLICATOR IN ACCORDANCE WITH REGULATORY GUIDELINES AND MANUFACTURER'S DIRECTIONS.

GENERAL NOTES

- ALL SOILS TO BE REMOVED FROM SITE MUST BE PLACED IN A TYPE II SANITARY LANDFILL. TIPPING TICKETS REQUIRED. WET SOILS MUST BE TEMPORARILY STOCKPILED FOR DEWATERING PRIOR TO TRANSPORTING TO A TYPE II SANITARY LANDFILL.
- CONTRACTOR TO COORDINATE ACCESS AND SCHEDULING WITH PRIVATE PROPERTY OWNERS.
- ALL AREAS DISTURBED BY CONSTRUCTION TO RECEIVE 6" TOPSOIL AND RESEEDED WITH RESTORATION SEED MIX (DWG. C10) UNLESS OTHERWISE SHOWN ON PLANS.



**HAVIT PROPERTY
HABITAT RESTORATION**

1"=30'

PROJECT GOALS:

- *10 - RESTORE 320 LINEAR FEET OF DEGRADED RIPARIAN STREAM HABITAT THROUGH INVASIVE SPECIES REMOVAL BETWEEN CLAY AND N. BOUND SHORELINE DRIVE



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 PROJECT LDR: MJO

MUSKEGON LAKE A.O.C. HABITAT RESTORATION AT RYERSON CREEK
WEST MICHIGAN SHORELINE REGIONAL DEVELOPMENT COMMISSION
 MUSKEGON, MICHIGAN

AS-BUILT
 BIDS & CONSTRUCTION OWNER REVIEW
 MDEQ REVIEW
 OWNER REVIEW

11/14/12
 5/16/11
 4/21/11
 3/10/11
 7/14/11

HAVIT PROPERTY
 HABITAT RESTORATION

FILE NO: 70080001

C500

PLANT LIST (SHEET SPECIFIC)

QUANT.	ABBRV.	BOTANICAL NAME	COMMON NAME	SIZE	COMMENTS
3	AR	ACER RUBRUM	RED MAPLE	1 1/2" CAL.	B & B
15	CO	CEPHALANTHUS OCCIDENTALIS	BUTTONBUSH	1 GAL.	CONT.
15	CS	CORNUS SERICEA	RED STEMMED DOGWOOD	1 GAL.	CONT.
7	IV	ILEX VERTICILLATA	MICHIGAN HOLLY	1 GAL.	CONT.
3	LL	LARIX LARICINA	TAMARACK	1 GAL.	CONT.
1	OB	QUERCUS BICOLOR	SWAMP WHITE OAK	1 1/2" CAL.	B & B
7	RP	ROSA PALUSTRIS	SWAMP ROSE	1 GAL.	CONT.
7	SD	SALIX DISCOLOR	PUSSY WILLOW	1 GAL.	CONT.
7	VL	VIBURNUM LENTAGO	NANNYBERRY	1 GAL.	CONT.

NOTE: PLANTS TO BE LOCATED IN THE FIELD (PATTERNED AREA) BY ARCHITECT. CONTRACTOR TO PROVIDE MARKED STAKES FOR LOCATION EFFORT. NOTIFY ARCHITECT ONE WEEK IN ADVANCE. CONTRACTOR TO INCLUDE MINOR BRUSH CLEARING FOR PLANTING IN BID.

GENERAL NOTES

1. ALL SOILS TO BE REMOVED FROM SITE MUST BE PLACED IN A TYPE II SANITARY LANDFILL. TIPPING TICKETS REQUIRED. WET SOILS MUST BE TEMPORARILY STOCKPILED FOR DEWATERING PRIOR TO TRANSPORTING TO A TYPE II SANITARY LANDFILL.
2. CONTRACTOR TO COORDINATE ACCESS AND SCHEDULING WITH PRIVATE PROPERTY OWNERS.
3. CONTRACTOR SHALL NOT BLOCK OR IMPEDE PROPERTY OWNER'S BUSINESS OPERATION.
4. ALL AREAS DISTURBED BY CONSTRUCTION TO RECEIVE 6" TOPSOIL AND SEEDED WITH RESTORATION SEED MIX UNLESS OTHERWISE SHOWN ON PLANS.

LEGEND

EXISTING WETLAND LIMITS

INVASIVE PLANT REMOVAL/CONTROL

CONTRACTOR TO REMOVE ALL INVASIVE/NUISANCE PLANTS SUCH AS HONEYSUCKLE, RUSSIAN OLIVE, REED CANARY GRASS, BUCKTHORN, GARLIC MUSTARD, BITTERSWEET VINE AND WILD GRAPE VINE FROM THE DESIGNATED AREA AND HAULED OFFSITE AND DESTROYED. WOODY PLANT MATERIAL TO BE CUT DOWN AT THE SOIL SURFACE LEAVING STUMP AND ROOT MASS INTACT. BRUSH ON HERBICIDE CONTAINING TRICLOPYR 3 TO CUT SURFACE OF STUMP TO ELIMINATE REGROWTH. WORK TO BE PERFORMED BY LICENSED APPLICATOR IN ACCORDANCE WITH REGULATORY STANDARDS AND MANUFACTURER'S DIRECTIONS. HERBACEOUS INVASIVE PLANTS TO BE TREATED BY WICKING HERBICIDE CONTAINING GLYPHOSATE ON LEAF SURFACES. WORK TO BE PERFORMED BY LICENSED APPLICATOR IN ACCORDANCE WITH REGULATORY GUIDELINES AND MANUFACTURER'S DIRECTIONS.



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WEST MICHIGAN SHORELINE REGIONAL DEVELOPMENT COMMISSION
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DAVID TRUST PROPERTY HABITAT RESTORATION

70080001 ■
 FILE NO ■
C600

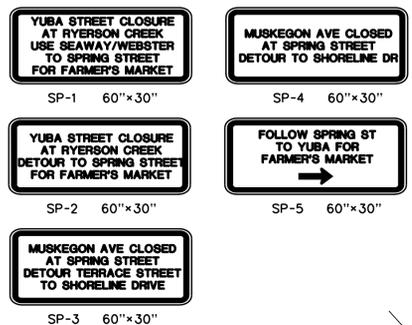
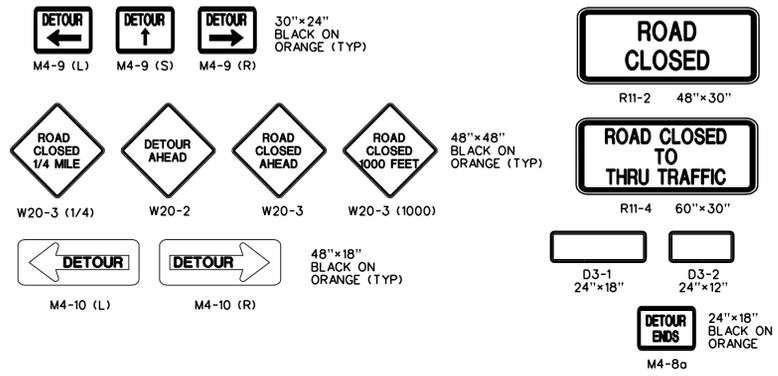
DAVID TRUST PROPERTY HABITAT RESTORATION



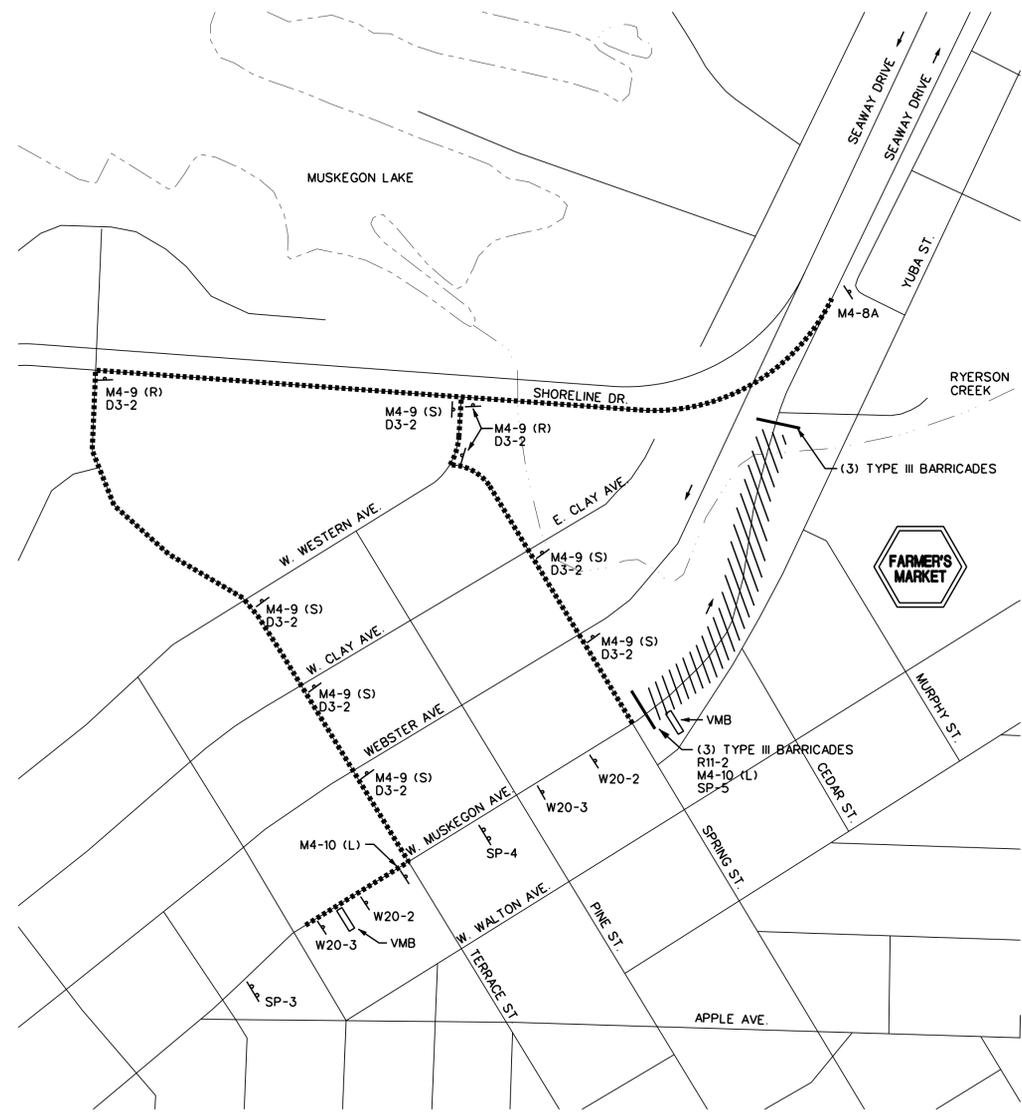
PROJECT GOALS:
 ■11 - RESTORE HABITAT ON 300 FEET OF RIPARIAN CORRIDOR BY REMOVING FILL MATERIAL, REMOVING INVASIVE SPECIES AND PLANTING NATIVE VEGETATION.

GENERAL NOTES

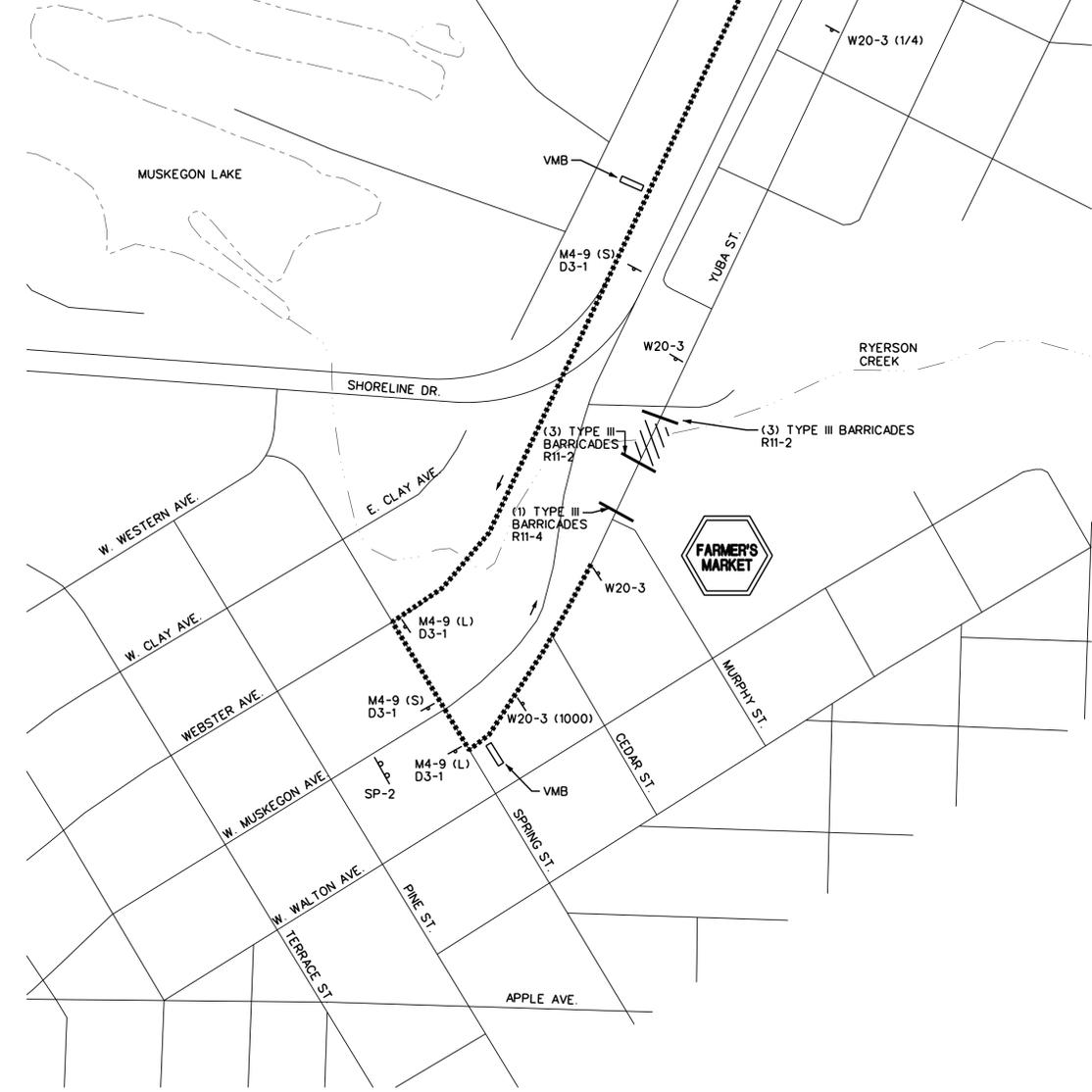
- ROAD CLOSURE: FOLLOW REQUIREMENTS SHOWN ON THIS PLAN. NO MORE THAN ONE ROAD CLOSURE ALLOWED AT A TIME. DURATIONS AS LISTED:
 - YUBA STREET AT RYERSON CREEK - MAXIMUM DURATION 3 WEEKS.
 - YUBA STREET NEAR MURPHY STREET FOR INSTALLATION OF SANITARY SEWER - MAXIMUM DURATION 1 WEEK. DO NOT BLOCK ACCESS TO MURPHY STREET / FARMERS MARKET.
 - W. MUSKEGON AVE / SEAWAY DRIVE - MAXIMUM DURATION 4 WEEKS.
- THE CONTRACTOR SHALL NOTIFY THE CITY OF MUSKEGON, MDOT (MUSKEGON TSC), AND WMSRDC A MINIMUM OF 5 WORKING DAYS PRIOR TO ERECTION OF DETOUR SIGNING AND BARRICADES.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ALL PERMITS FOR ERECTING THE DETOUR SIGNING AND FOR MAINTAINING THE DETOUR DURING CONSTRUCTION.
- PROVIDE VARIABLE MESSAGE BOARDS FOR YUBA STREET CLOSURE AND W. MUSKEGON AVENUE CLOSURE FOR ONE WEEK IN ADVANCE OF CLOSURES FOR ADVANCE NOTICE (TWO BOARDS EACH LOCATION). MESSAGE TO INDICATE LOCATION AND DATE OF UPCOMING CLOSURE.



LEGEND
 TYPE III BARRICADE (S)
 TEMPORARY SIGN, TYPE B
 PROJECT LIMITS



WEST MUSKEGON AVE. CLOSURE DETOUR PLAN
 1" = 300'



YUBA ST. CLOSURE DETOUR PLAN
 1" = 300'